The Cornell Countryman

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PROSPECTS FOR DAIRYING IN NEW YORK STATE

By R. A. Pearson

Commissioner of Agriculture, State of New York

DAIRYING is the most important branch of agriculture in this state. The last available census figures, which are for 1900, show about one and one-half millions of cows, one-third million heifers, one-half a million calves, and a total value of dairy products of over fifty-five millions of dollars. The estimates of the United States Department of Agriculture for 1910 show about one and three-fourths million cows and nearly 900,000 other cattle. With a long lead New York State stands ahead of all other states when compared on the basis of dairy production.

Dairying is destined to continue the most important branch of agriculture in New York state because:

1. The people must have milk; they will also have butter and cheese. This is a state of large population and it is rapidly becoming still more populous. There are now nearly nine million persons in New York State,—most of them in cities and towns. The following shows how quickly the dairy market increases with the increase of population. In 1899, the daily average number of forty quart cans of milk received in the New York market, over different railroads, was nearly 26,000. In 1908, it was more than 41,000. The market is here.

2. This state is preeminently adapted to dairying. Its fertile hills and valleys, cool springs, clear streams, many ice ponds, grain and forage crops, and its present dairy development, all point to great activity in dairying in the years to come. The facilities are here.

3. From now on dairying will be conducted more and more as any business is conducted. There is to be a more definite relationship between the cost of production and the selling price. Economic laws, which no force can change, will provide a margin of profit in dairying that is comparable with that in other industries. We have not seen the profit in the past, chiefly because of competition in the west whence free fertility has been sent east in the form of all kinds of farm crops. But now the west begins to realize the true value of fertility.

The character of our dairying is destined to change much in the coming years, and chief among the changes we shall see:

1. More pure-bred and high-grade cows. These will help to reduce the average cost of production and their number will be increased by associations of breeders and so-called cow testing associations and the efforts conducted privately by hundreds of highly intelligent farmers. Today there are more than 3600 owners of pure-bred cattle in this state. It is a modest prophecy to say that this number will be trebled within the next few years.

2. More success in dealing with bovine tuberculosis. This disease is causing great loss to our dairymen because of reduced production and

deterioration of the animals affected. Its control is the dairymen's great problem. They will learn that affected herds may be successfully handled without too serious loss and with positive assurance of getting rid of the disease.

3. More winter dairying. Cow owners will learn that it is profitable to produce milk through the winter, thus prolonging the lactation period.

4. More care in keeping milk clean and cold. In New York State great strides are being made in this respect. Much more improvement is to come as we learn more about the fundamental principles of sanitation.

5. More selling of milk on the basis of its fat content. The milk market will never be in satisfactory condition until buyers recognize that all milk is not alike and become willing to pay better prices for better qualities. The fact that practically all milk today sells for the same price is the chief force in reducing the average quality of milk in this state.

The changes are to be instituted by those dairymen who are least tied to old methods. Most prominent among them are the younger dairymen and it is a pleasure to write that many dairymen in New York who are old in years are young in the meaning of this sentence. Just as the youngest city in the far west is found to have the most modern school buildings, street car system, electric lighting and water supply because that city when it began was not handicapped by antiquated equipment, so the younger dairymen who are free to act will be the ones most readily to take up the latest improvements in dairy work. There are nearly 200,000 farms in New York having dairy cows. This means that about 8000 men enter upon dairy farming anew every year. The future of dairying in New York State depends upon them.

COÖPERATION IN DAIRYING

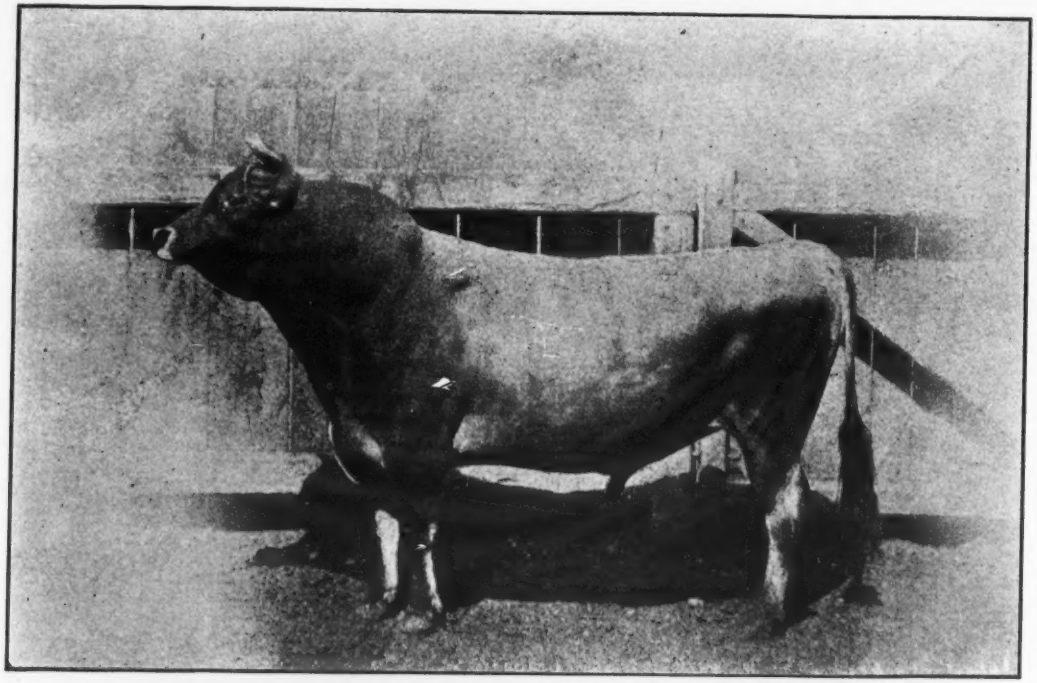
By J. D. Frederiksen

President of the New York State Dairymen's Association

THE outcome of the industrial revolution through which we are passing and which at times presents an aspect of great danger to society, on one hand threatening to lead into a new feudalism, on the other facing socialism or anarchism, is the burning question of the day and one that must be solved before long. All agree that in many undertakings the large corporation handles the business more economically than the individual worker or the small employer and there is no possibility of turning back from the rapid development towards combination in business which is now going on. The problem before us, therefore, is to lead such development in a direction of least danger and of greatest possible benefit to the community.

Fortunately we have a solution which eventually will save us from domination of the Trusts as well as from oppression of socialism. The remedy is co-operation, and in no other industry is it more desirable or easier of application,—in no other line has it already proven more successful,—than in the dairy industry. This applies to dairy farming as well as to the manufacture of butter and cheese.

Many earnest and enthusiastic advocates of progress in farming believe that to take advantage of modern machinery and methods it is necessary to have larger farms under one management and that the development in farming and in the industries connected with dairying must drift towards the trusts at the sacrifice of individual ownership and individual business. I believe this idea to be entirely erroneous. Not only is there no economic necessity for such a development, but I am firmly convinced that the "trusts" related to the dairy industry which are already in existence, the large combinations



JERSEY BULL, "KING OF ARDEN"

Noted prize winner imported by F. S. Peer for H. N. Higenbotham, of Joliet, Ill.

Courtesy of F. S. Peer.

of creameries, and the great city milk supplies, must sooner or later give way to co-operation of producers. And I am optimistic enough to believe that the great industry in which we are specially interested is destined to lead the way for many other industries to follow.

Co-operation in dairying does not mean commission,—it does not mean division of property or sacrifice of ownership; it does not mean abandonment of the incentive and encouragement found in individual production. It means a greater chance to give undivided personal attention to certain phases of the industry and to have other duties among the many with which the dairy farmer must cope, taken care of to better advantage and at a larger profit than he is able to do it alone. It means more capital and greater skill at his service,—in fact, it gives the individual small producer all the advantages of the trust without its evils and without the sacrifice of individual ownership or identity.

Among the phases of dairy farming in which co-operation may profitably be applied the following are perhaps the most important ones.

Cow Testing Associations engaging an expert to periodically test the amount of, and the percentage of fat in, the milk of each cow in the herds of the members, have already been established and more are soon to come. The individual farmer has no time and cannot always afford to hire a reliable person to do the testing and so a number of dairymen unite and divide the expenses. The expert spends 24 hours at each farm every two or three weeks, weighs and "Babcocks" the milk of each cow morning and evening, weighs and computes the feed and keeps the record so that at the end of the year the dairyman will know what each cow has done for him and whether it has paid for its food or not. This is one of the most powerful means of increasing the yield and improvng the herd. It makes the farmer interested in every cow and creates a healthy rivalry among the members of the association.

Breeding Associations. In breeding, one-half of the result is due to the male and with a thoroughbred bull of fine quality a herd of milk cows can soon be improved. The individual farmer can, however, seldom afford to buy an expensive bull, but ten to twenty dairymen can afford to purchase one together.

Associations for the Purchase of Concentrated Feed Stuffs, is another line of co-operation which has been successful in many places.

Co-operative Creameries and Cheese Factories have been in existence for more than thirty years and make some of the most successful institutions. In Wisconsin and Minnesota they hold their own in competition with the large "Centralizers" which command almost unlimited capital and everywhere the co-operative whole milk creameries make the best butter. In Denmark the system has been universally introduced and magnificent modern creameries have been built without investment of capital by the farmers, the banks furnishing the funds at low interest and without ever losing a dollar. For, there is no better security than the combined guaranty of a number of dairy farmers and the loans are gradually paid off by the creation of a sinking fund which is maintained by leaving in the treasury a fraction of the amount due for milk.

The success of these creameries naturally induced the dairy farmers to further cooperation, and large *Cooperative Slaughter houses* have been established by the Danish farmers where they find an outlet for their hogs which make up a large portion of the receipts from the dairy.

There is one branch of the dairy industry that is exceedingly well adapted for cooperation and still but little systematized in that direction. I refer to the *City Milk Supply* which, when it is not in the hands of a trust, is usually carried on with little regard for economy. It should be organized so that three or four

milk wagons would not go up and down a street where one could do the work and so that thoroughly sanitary methods would prevail for the benefit of producer and consumer alike. There is a large field for cooperation urgently in need of the introduction of the system.

The one inexorable condition for the success of any of these institutions is that all members shall stand shoulder to shoulder sharing alike in the benefits as well as in the risks and expenses of the undertaking. Whenever so-called cooperative associations have been started by individual promoters who have tried to incidentally grind their own axes they have been failures. But where the true cooperative spirit prevailed they have proven eminently successful and gradually as the necessity of such absolutely mutual solidarity is understood by the people, cooperation in dairying will surely be universally introduced.

COÖPERATIVE COW-TESTING ASSOCIATIONS

By E. S. Savage

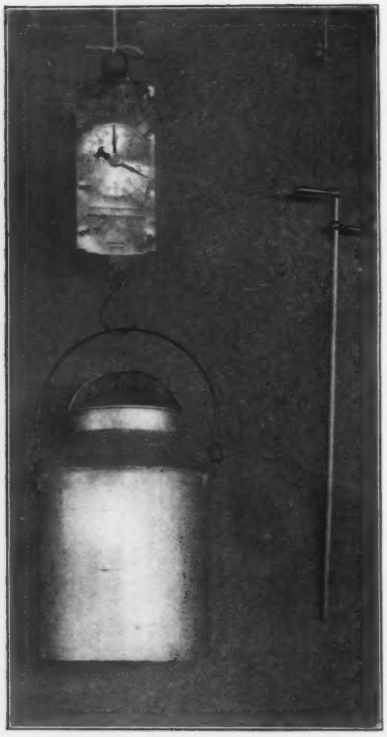
Assistant Professor of Animal Husbandry, Cornell University

"MY cows are paying me more money than they did last year." This expression, quoted in a letter from R. W. Redman in charge of cow-testing work in Maine, represents the concensus of opinion as to the value of the work to the farmers in that state. From association records from many states very little dissatisfaction with the value received from the testing work is found. The few, who have expressed dissatisfaction have invariably been the poorer dairymen in the associations concerned. As an additional benefit to the community, one of the associations in Maine has been doing considerable cooperative purchasing in connection with its testing work. The members of this association in 1908 and 1909, purchased sixteen cars of grain and three of pressed hay. The next winter it was not necessary to do this, as the local dealer considered it to his advantage to keep prices so low that cooperative purchasing by the members was needless, and thus the whole community was able to purchase feeding stuffs at reduced price. After an association has been firmly established, the benefits can be increased just as fast as the leaders may plan the courses of operation. The benefits to be derived along feeding and breeding lines, if efforts are well directed, are incalculable.

History and Plans of Association Work up to the Present Time

The first associations were started in Denmark about sixteen years ago. In five years there were 170 in operation in that country. There are today in Denmark about 500 associations, in Sweden as many more, and in Norway and other countries in Europe several hundred. Dairy work in these countries is much better organized than in the United States and cooperation in all lines of agriculture is much practiced. In contrast to the 170 cow-testing associations in Denmark at the end of five years after the beginning of the movement, there were in the United States, five years after the first association had been formed, only 29 such associations. The farmers in the United States seem to be adverse to cooperation along any line, apparently for two main reasons: —the agricultural population is too scattered, and there is a lack of leadership in farming communities. As far as the cow-testing associations are concerned, the latter seems to be the better explanation.

In Canada, about sixty cow-testing associations have been formed. They are not self-supporting, but are supported entirely by the government, except that each farmer must equip himself with necessary scales, sample bottles and sampling dipper. In the



WEIGHING PAIL, SPRING BALANCE AND "MILK THIEF" OR SAMPLING TUBE FOR EACH MEMBER OF THE ASSOCIATION.

United States there are now 57 cooperative associations, scattered through the states as follows: Wisconsin, 12, Vermont, 9; Maine, 7; Michigan, 6; Iowa, 5; California and Ohio, 3 each; Pennsylvania and New York, two each; and Washington, Connecticut, Colorado, Nebraska, New Hampshire, Oregon, Maryland and Illinois, one each. These 57 organizations are all practically self-supporting and are organized on the same general plan which Mr. Helmer Rabild originated in Michigan in 1905.*

*Mr. Rabild organized his first association in Fremont, Michigan, when employed by the Michigan State Dairy and Food Commissioner. He had had practical experience in the work in Denmark before coming to this country. He is now in charge of the cow-testing work in the Dairy Division of the United States Department of Agriculture. He has been active in the formation of many of the 57 associations now in operation in the United States.

From what can be learned in the literature, the association work has been most successful in Maine and Vermont. In Maine, the State Dairy Instructor, Mr. Leon S. Merrill, has been most active and in Vermont, Director J. L. Hills, of the State Experiment Station has been the leader.

The organization of an association is brought about by a few men in a community who become interested in the work. A meeting is called to which all the farmers of the community are invited. A temporary organization is effected and a soliciting committee appointed. When the committee has secured a list of farmers having a sufficient number of cows to keep a tester or supervisor busy, a permanent organization is effected and a set of by-laws adopted. A supervisor and outfit are then secured and the work of the association is started. The supervisor usually is furnished with the following outfit upon beginning his actual work in the field:—

1. Babcock tester, usually the 12 bottle size.
2. Necessary glass-ware for use in testing, which includes milk-test bottles, pipettes, acid measure and dairy thermometer.
3. Supply of sulphuric acid which can ordinarily be secured from the local creamery.
4. A 60-lb. spring balance scale made to weigh in tenths.
5. Thirty to forty wide-mouth bottles to contain samples of milk taken.
6. A pail for weighing milk.
7. One sampling tube with opening at least three-eighths of an inch in diameter or a sampling dipper made to hold one ounce.
8. A supply of record blanks.
9. Suitable cases in which to transfer the above outfit from place to place.

In Mr. Rabild's plan, twenty-six is the usual number of farmers in an association. The supervisor visits each herd once a month, making a test of each cow and keeping an accurate record of the feed consumed and the milk yielded by each cow for

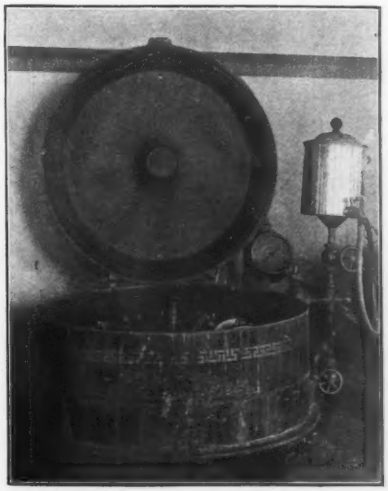
one day. From this day's record there is computed each month the profit or loss to the owner from each animal. From these records a fairly reliable approximation can be made of the profit or loss to the farmer from his herd each year. The relative value of the different animals is thus established and a good basis of selection made from which the farmer may work in breeding up and improving his herd. The cost to the farmer is usually $1.00 per cow per year for the tests and the computation of results by the supervisor for the association.

Opportunities in New York State

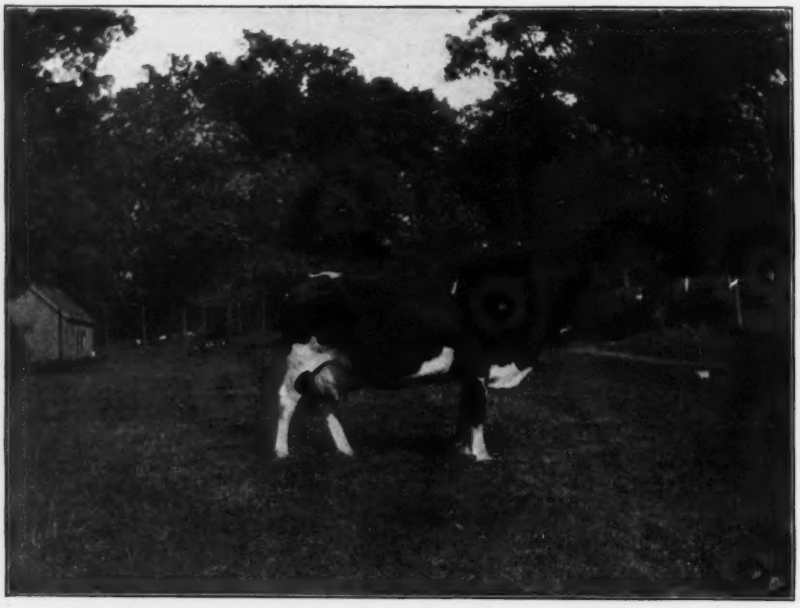
In the opinion of the writer it is time New York farmers actively undertook cow-testing work. Some progress has already been made by the New York State College of Agriculture, but the work has been restricted because of the lack of funds. The State Commissioner of Agriculture has given much thought to this question and the State Dairymen's Association has considered the advisability of forming cow-testing associations. In the beginning made at the College of Agriculture, two departments have been interested. The department of Animal Husbandry has published a pamphlet on the formation of cow-testing associations, promising aid in organization of associations when called upon. The department of Dairy Industry has organized association work in connection with its skimming stations near Ithaca and has had very satisfactory results. The work by the Dairy Department has been without cost to the patrons. Two associations have been formed in the State, one at Delhi, New York, in connection with the Cooperative Creamery, and one at Alfred, New York. Mr. A. J. Nichol has done much to advance the interests of the farmers at Delhi and Professor W. T. Crandall of the State School of Agriculture at Alfred, New York, has been active among the dairy farmers in that section.

However, more needs to be done. It is hoped that funds may soon be available for the promotion of this much needed work in New York State. The results in other states and countries place this work beyond the experimental stage. It is the writer's opinion that this is a most profitable field for college extension. It is primarily educational and is a logical part of the extension activities of the State College of Agriculture. The experience in other states, notably Wisconsin, has shown that there should be a definite state policy in regard to the cow-testing associations.

In New York State there are in round numbers 1,800,000 cows, about one-tenth of the cow population of the United States. New York ranks tenth in average production of milk per cow, with 4378 pounds per year. There is no reason why New York cows should not yield at least 6000 pounds of milk per year on the average and the state rank first in average production in the United States. The formation of many live cow-testing associations will help to



TYPE OF 24 BOTTLE STEAM TESTING MACHINE FOR USE OF SUPERVISOR WHEN THE ASSOCIATION IS CONNECTED WITH A CREAMERY OR CONDENSERY.



GRADE HOLSTEIN COW "LINA," CORNELL UNIVERSITY HERD. AVERAGE YEAR'S RECORD FOR THREE YEARS PREVIOUS TO SEPTEMBER 1, 1910 385.6 LBS. BUTTER FAT.

raise our average by the elimination of unprofitable cows. Such associations will be effective only when the farmers themselves create the demand for them and they are so organized as to be practical in operation, economical, reasonably accurate, educational, and profitable.

Plan for Cow-Testing Associations in New York State

The New York State College of Agriculture agrees to furnish a supervisor to any body of farmers in the State upon satisfactory assurance that they will have at least one thousand cows to be tested during a period of one year. Such a group would be expected to have a definite organization as here suggested.

Organization

1. This body of men shall constitute the cow-testing association of the community in which they live.

2. This body shall have the customary officers of such an association, viz:—president, secretary, treasurer and board of seven directors, of which the president and secretary shall constitute two members.

3. The secretary of the association shall be the supervisor furnished by the State College of Agriculture.

4. Any farmer may become a member of the association of his community upon entering one or more cows for one year's test.

5. The fee for one year's record shall be $1.00 for each cow, one-half payable to the treasurer of the association at the time of entering the animal, one-half payable at the end of the first six months of the record.

6. The cost of the association for the services of the secretary shall not exceed $750.00 per year for the work involved in testing and keeping the records of a maximum of twelve hundred cows.

HOLSTEIN COW "GLISTA TAU" CORNELL UNIVERSITY HERD. AVERAGE YEARS RECORD FOR 3 YEARS PREVIOUS TO SEPTEMBER, 1910, 256.8 LBS. BUTTER FAT. THE DIFFERENCE IN DAIRY CONFORMATION OF THESE TWO COWS WOULD NOT INDICATE THE DIFFERENCE IN RECORDS

7. From the remaining money coming into the association each year, suitable quarters shall be provided for the secretary to do his work and he shall be provided with suitable apparatus, record sheets, etc., for his work. If possible these quarters shall be in connection with a public building so that they may serve as a meeting and resting place for farmers who are members of the association. It shall be arranged, where possible, that these quarters may be open during each day, whether the supervisor is present or not, and in the evening as much as possible. In general, the thought is that the rooms of the association shall be the Farmers' Club of the community.

8. The association shall furnish each member with a suitable milk scale, record sheets for the tabulation of each day's milk and feed, for periods of one month, and sample jars for a composite sample of each cow's milk each month.

Duties of the Officers

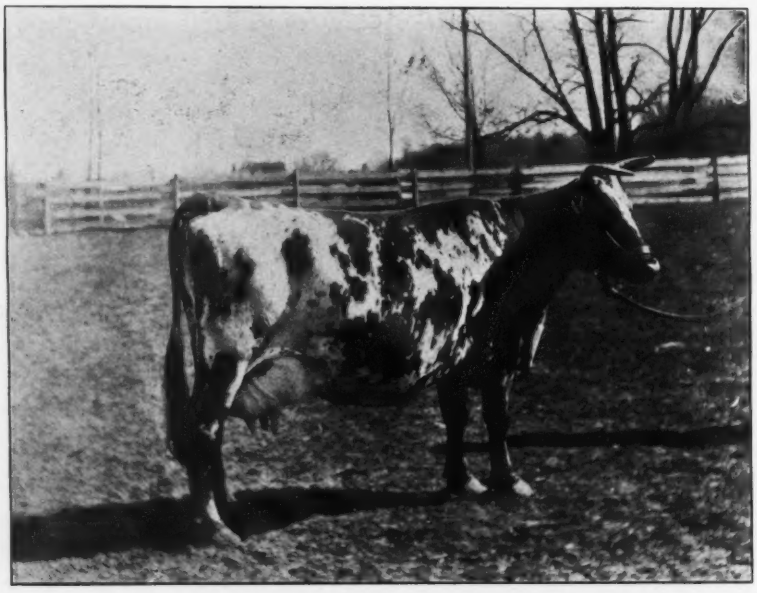
1. The duties of the president, treasurer and board of directors shall be the customary duties of the officers of such associations.

2. The duties of the secretary shall be as follows:

a. He shall be at the service of each individual member of the association at all times so long as this individual attention does not work to the detriment of the association as a whole.

b. He shall test the composites furnished by the members each month, work out the number of pounds of fat produced by each cow per month, work out the cost of her food, and determine the profit or loss returned to the owner by each cow each month.

c. He shall keep these records in duplicate. One set shall be for his own use, ultimately to become the property of the State College of Agriculture. The other set shall be sent



AYRSHIRE COW "RENA ROSS"

Owned by J. R. Valentine, Bryn Mawr, Pa., bred by W. G. Tucker, Elm Valley, N. Y. Yearly record 15072 lbs. milk, 643.71 lbs. butter fat.

to the members each month for their permanent records.

d. He shall act as the representative of the State College of Agriculture and of the agricultural interests in the community and shall refer to the proper authorities any question which he cannot answer himself.

e. He shall visit the farm of each member of the association as often as once each month if possible, not as an inspector but to give helpful suggestions in the arrangement and feeding of the herd.

f. In case the secretary suspects fraud in the composite samples or monthly records of any members, he shall have the right to make a personal check test at the farm whenever and for whatever length of time he may desire. He shall be authorized to report his findings to the board of directors with recommendation.

Duties of the Members of the Association

1. Each member shall keep careful records of the production and feed of each cow:

a. By weighing the milk produced by each cow at each milking.

b. By weighing the grain fed to each cow each day and such roughage as silage, roots, etc., and by estimating the amount of hay fed to each cow each day.

2. Each month he shall take a three-day composite sample from the milk of each cow and deliver the sample into the hands of the secretary of the association.

3. At the end of each month he shall send to the secretary the record of the milk produced by each cow during the month and the record of all feed consumed by each cow during the month.

4. He shall pay to the treasurer of the association $1.00 for each cow entered by him in the records of the association for the term of one year, payable as above mentioned in Section 5 under "Organization."

The subject matter of the above plan can be incorporated in the By-laws of the association when formed, the plan being modified to suit the conditions of any particular com-

munity. More or less money would be necessary for supplies on the organization of each association. The State College of Agriculture would furnish this money at the start, later to be reimbursed by the association. Lack of interest at the beginning of its second year may result in withdrawing from the association the support given by the college authorities. In this age, farmers should have a spontaneous interest in movements such as this, which have demonstrated their value.

The work of cow-testing associations would be conducted according to the above plan as a department of a grange or any other agricultural organization, or in connection with proprietary creameries or condenseries. Since the plan does not call for the definite visit of the supervisor to each farm at any stated time, the semi-official testing work of the breeders' associations can be combined to the mutual benefit of the farmer owning pure-bred stock and of the cow-testing association, in that the cost of the official inspections could be reduced and the money paid for the inspections revert to the testing association. Thus, farmers could be encouraged to keep more pure-bred dairy cows and to mark them with semi-official records to great advertising advantage.

Pictures and records of the leading cows of the four great dairy breeds are shown in this issue to illustrate the ideal to which the breeders of the different breeders' associations may aspire. Illustrations are also given of two cows in the herd of the New York State College of Agriculture, equally good in appearance but which have yielded largely different amounts of fat under like conditions of care and management. Only some careful record of production would reveal the difference in the productive value of these two animals.

The writer is aware that the full realization of such a plan among a community of farmers is ideal and difficult of attainment. The educational possibilities of such associations, however, would seem to justify their general introduction.

TESTING OUTFIT FOR SUPERVISOR WITH ORDINARY ASSOCIATION.

WILLIAM HENRY BREWER

By L. H. Bailey

IN the death of Professor Brewer, of Yale, early in November, the country has lost one of its earliest teachers of agriculture and also one of its most versatile and interesting characters.

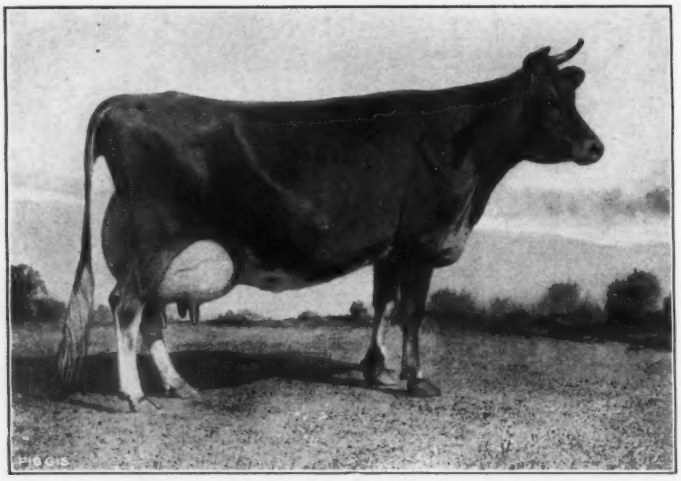
Mr. Brewer was born in Poughkeepsie in 1828. He was graduated with the first class of the Yale Scientific School; in subsequent years he continued his studies abroad, part of the time under Liebig. He was early interested in agricultural education, being one of the most prominent of the pioneers of the present order of agricultural institutions. As early as 1851, he had charge of an "agricultural institute" or school in Erie County, New York. In 1852 he became connected with the Ovid Academy, at Ovid in Seneca County, New York, an institution that later became the seat of the first New York State College of Agriculture. He remained at Ovid until 1855, then went to Europe, and returned to the Academy in 1857, remaining a year but not until the agricultural work began; but he was connected with the institution during much of the period when the agitation that led to the real founding of agricultural colleges was in progress. In 1864 he became professor of agriculture in the Sheffield Scientific School at Yale, a position that he held for forty years, covering the epoch of the organization and development of the great chain of land-grant colleges devoted to agriculture and the mechanic arts.

During all these years and until his death, Professor Brewer was a man of many interests. He was geologist, mining engineer, chemist, botanist, forester, sanitarian, explorer, art critic, publicist, and long an authority on stock-breeding. Mt. Brewer in the Sierras bears his name. He was president of the Arctic Club of America, and served as member of many commissions and boards, one of them being the Scientific Survey of the Philippine Islands. He was author of the Botany of California, in two volumes, having been First Assistant on the California Geological Survey in 1860–1864. He is commemorated in the names of several plants, as *Carex Breweri*, *Astragalus Breweri*, *Antirrhinum Breweri*, *Cirsium Breweri*, and others. He was not only interested in many diverse lines, but he became eminent in them. In all these activities, he kept his interest in agriculture, and particularly in stock-breeding, well to the front. In "American Men of Science" he is starred as one of the one thousand leading men in North America in the natural and exact sciences, this position being retained in the second edition of the directory, recently issued. He was a forceful lecturer, sympathetic companion, and a picturesque personal figure.

Professor Brewer left no book on agricultural subjects. He was at one time under contract to prepare a book on stock-breeding for the Rural Science Series, but ill-health and advancing age compelled him to relinquish the undertaking. His report on cereal production in the Tenth Census is a notable contribution.

Professor Brewer's boyhood was spent in and near Ithaca, N. Y. The father removed from eastern New York to a farm in Enfield, just west of Ithaca, soon after the birth of the son; the son attended the old Ithaca Academy, and thence went to Yale, long before the founding of Cornell University. An uncle of Professor Brewer also settled in the Enfield Valley, and descendants now reside in Ithaca. Professor Brewer made frequent visits to the old places until very late in life.

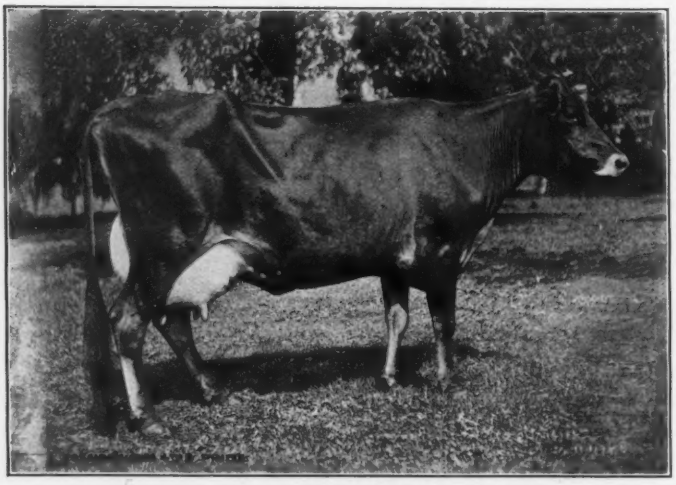
The passing of Professor Brewer removes one of the few remaining links between the old order and the new in agricultural education. He brought high accomplishment to his work.



JERSEY COW FIGGIS 76106, NO. 4 REGISTER OF MERIT.

Seven day record 293 lbs. 7 oz. milk; 16 lbs. 1.3 oz. butter fat. Champion and grand champion in show ring at St. Louis Exposition in 1904. Died Nov. 23, 1909 at the age of 18 years, 6 months. Owned by Hood Farm, Lowell, Mass.

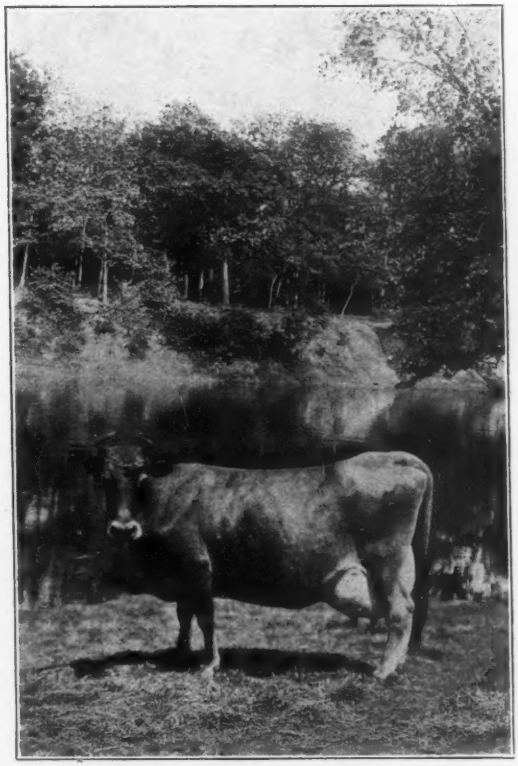
Courtesy American Jersey Cattle Club.



JERSEY COW ROSAIRE'S OLGA 4TH'S PRIDE 179509
NO. 406 REGISTER OF MERIT.

Yearly record 14,104 lbs. 13.6 oz. milk; 836 lbs. 8 oz. butter fat.

Courtesy American Jersey Cattle Club.



JERSEY COW JACOBA IRENE

Bred by J. M. Shrader, St. Joseph, Mo. Owned by A. O. Auten, Jerseysville, Ill. Yearly record 17253 lbs, 3.2 oz. of milk; 952 lbs. 15.4 oz. butter fat.

Courtesy The Jersey Bulletin.

THE PACIFIC NORTHWEST FOR THE DAIRYMAN

By A. Stone, '04

Manager of Willowmoor Farms, Redmond, Washington

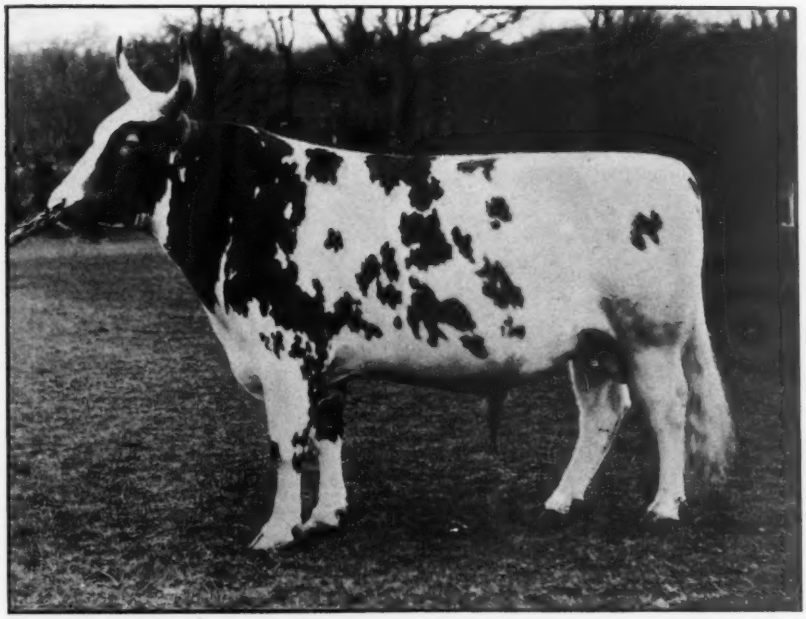
THE dairy district of the Northwest lies west of the Cascade Mountains, in the Willamette Valley, Oregon, and the Puget Sound country of Washington. This region has been lauded by visiting dairymen, dairy writers, government experts and foreign visitors as the ideal home of the dairy cow, the country with the greatest dairy future before it. The writer after a residence of two years is sharing the same feeling.

The factors concerned in the making of this Northwest the greatest dairy district in America are climate, soil and location with reference to markets. The climate is the most important feature and the one most peculiar to this region. Its chief advantage is its equability, cool summers and mild winters, together with an abundance of light rainfall. The mid-summer days are never excessively warm, the nights are always cool and the winters are more wet than cold. It freezes but little and the grasses remain fresh and green the season round, so much that it is a common practice among the old time ranchers to range their cows the year round, supplementing winter grazing, but not to exceed four months, with hay but no grain. The production following such a practice is astonishing, especially so in view of the class or kind of cows usually kept. This possibility of grazing cattle throughout the year, while not to be commended for cows in milk, is of great importance in the handling of dry stock and young animals. Our own practice is to keep all young stock out-of-doors as much as possible. Young calves after a week or so old are out except in the severest weather and after three to four months old they are only housed at feeding time, and from six to seven months, they are turned away to range until approaching the time of freshening.

The only supplementary feeding necessary is about four months when they are fed hay once per day in racks under covered sheds extending along the sides of hay barns located in the pasture. They are also grained between three and four months but not to exceed three pounds per animal per day. The labor cost of winter care for upwards of 100 head does not exceed fifty cents per day. The stock, fed and handled in this way, develops into larger, healthier and better animals than can be produced in the dairy sections of cold winters with excessive cost of winter care and maintenance.

The milking herd can be profitably pastured for eight months on well drained soils and on few farms are they stabled nights more than four months and never over five. And in the stables there are no difficult problems of ventilation; windows are never all closed and the doors are open more often than closed. Our own stable is equipped with the King System, but it is rarely of any use.

The cropping systems possible under the above climatic conditions are especially adapted to dairy feeding. The season is long yet the weather averages so cool that none of the cereals mature for grain excepting oats and barley. They all make a tremendous growth and are as a consequence much more valuable for grain feeding and are available over long periods. Corn is not as successful, the seasons averaging too cool for its proper development; yet it produces a large tonnage per acre. And because of its slow growth or through some other climatic influence, it makes a better quality silage than



PETER PAN NO. 7140

Champion Ayrshire Bull of Great Britain, recently purchased to head Willowmoor Herd

would corn at the same stage of maturity in the corn belt. All the clovers grow naturally and are extensively cultivated. Vetch sown with one of the winter cereals is also very much in favor for either hay, silage or soiling purposes. All grasses and other forage crops mature too early to be successfully handled for hay and must be kept back in some way to July or August. The common practice among the old ranchers is to pasture until the latter part of May or even into June, then mow for hay in July and again pasture in the fall. The more rational way is to use the early and late growth for silage or soiling purposes. Pasturing early and late on the average soil works injury to the future crop. However, whether pastured or cut, the point is that all clovers, grasses and other forage crops produce during the season a large amount of feed.

Possibly the most peculiar advantage derived from the climatic conditions with reference to forage crops is that of kale, Thousand Headed Kale. It belongs to the cabbage family and is cultivated in much the same way. The seed is sown in beds in March or April and then transplanted into the field in June or by the first of July. It remains in the field and continues to grow all winter; our winters apparently have no effect upon it. It can be fed from October to April, thus affording to the dairyman a fresh, succulent feed, high in protein and fat, for six months during the winter season. The climate is thus wonderfully favorable to the growth and development of young stock, to the management of the dairy herd and to crops especially valuable for dairy feeding.

The soil on lands adapted to cultivation while variable is deep and rich. The uplands will be valuable for grazing. The country is so new that the soil is practically virgin. In fact, it has not yet reached its highest point of productivity. There are at the present time in western

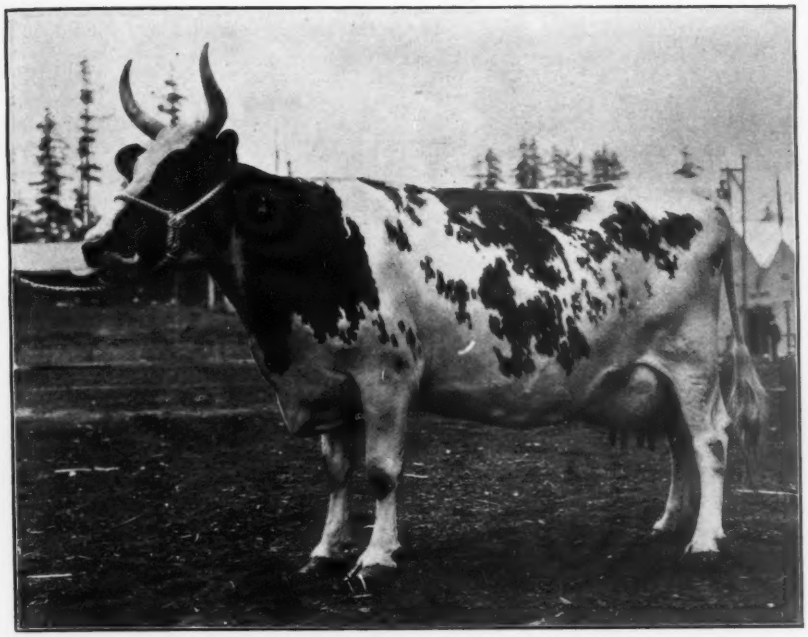
Washington less than five hundred thousand acres of cleared land and over two million acres of logged off land awaiting development. All crops adapted to the climate reach a maximum production. If dairying can profitably build up worn out soils, dairying on virgin soils under the above conditions should be and always remain to be a most sound and profitable industry.

The highest success in dairying is dependent on market facilities, both for the purchasing of the necessary concentrates and the disposal of the products. The Northwest occupies a unique and enviable position in this respect. To the east and south is one of the greatest grain and alfalfa districts of the United States. The natural outlet for this vast product is through the Pacific ports which bring to the door of the dairymen of this Northwest an unlimited supply, at the lowest prices, of mill products and alfalfa. A new and very important mill product is the soy bean oil meal, a by-product of the soy bean grown in Manchuria and Korea. This meal is coming to be recognized as the most valuable of the oil meals. It is credited with 46 per cent protein and 10 percent fat and does not have the laxative or irritating effect of the other oil meals on the bowels. Because of the low rates of water transportation this meal is now sold throughout the Northwest at a comparatively low cost. The Northwest has a corner on this new feed, since the whole amount imported to this country arrives at Seattle, Washington, and the supply has not yet met the rapidly increasing local demand.

The market for the dairy products is practically world-wide; vessels leave the Northwest ports for all points up and down the Pacific Coast and the far East or Orient. Alaska is and will continue to grow as a big market for all products of the dairy. Milk for this export trade must necessarily be condensed and the growth of this trade is seen in the establishment of the condenseries throughout this region. The creameries also handle a great deal of raw milk. At the present time there are about twenty condenseries and two hundred creameries in operation in the state. The competition between the factories and the demand for local and home consumption results in uniformly high prices to the producer and this competition is increasing. In fact the demand or market is developing more rapidly than the production. The opportunities in the Pacific Northwest for the dairyman are truly exceptional.

The natural factors are all here; what is further needed for its greater development is more and better cows and more and better dairymen. The dairymen are coming each year from the East. The greater problem is more and better cows. Any old kind of a cow is at a premium, cows not worth $40 bring $100 and good cows are not to be had at any price. The solution of this problem must come from grading up by the use of pure bred bulls. And again the supply is far short of the demand. Recent figures in the *Horn and Hoof Livestock* magazine credit the states of Washington and Oregon with only ten herds of Holsteins, six of Jerseys, six of Ayrshires and three of Guernseys. There are a large number of new beginners in all four breeds and every breeder of pure bred stock is flooded with inquiries he is unable to take care of. Coupled with the local demand for pure bred bulls and foundation herds is the foreign trade with Japan, South America, Hawaii and other points in the Pacific. This foreign demand will care for any surplus for years to come. The ports of the Northwest are the logical shipping points for this cattle trade and the foreign buyers prefer local stock as it is larger, better developed, and what they can buy is of the right quality. The opportunities for the breeder of pure bred cattle are greater than in any other section of the United States.

A recent article appeared in one of the local dairy papers entitled "The Changing Popularity of Breeds." The



AYRSHIRE COW HEATHFLOWER IST, OF BARCHESKIE, 21701

Grand Champion Alaska-Yukon-Pacific Exposition Livestock Show; Grand Champion this fall at Washington State Fair; Grand Champion dairy cow over all breeds at North Yakima. At the Western Washington Fair she won the twenty-four hour dairy test by a wide margin. One of the herd at Willowmoor Farms.

(Courtesy Ayrshire Breeders Association)

writer points out that the advent of the farm separator, the condensery, and the increased price of dairy by-products have created a sentiment and demand in favor of the heavy milk-producing strains as against the so-called butter breeds. His reasoning is correct and the conclusions drawn are typical of the conditions today in the Northwest. The heavy milk producing cows of the Holstein and Ayrshire breeds are in the greatest demand. Climatic influences in their effect on feeds, etc., have been the greatest force in the development of the different breed characteristics, and local conditions are more nearly typical of those in the home lands of the Holstein and Ayrshire than of the other breeds. However, all breeds thrive in the Northwest and we need them all to raise the standard of production to the point it should attain. The facilities are here and the dairymen are coming—what we need is more and better cows.

BREEDS OF DAIRY CATTLE

By F. S. Peer

Ithaca, N. Y.

OF all breeds of cattle the world over no breed is so perfect in type, so strong in family characteristics as the Ayrshires found in their native land. Few specimens of any breed are brought down to such perfection of form. The Ayrshire cow as she stands in her native pasture is the highest class dairy cow of Great Britain. She is not only the most perfect in dairy conformation but she is as good as she looks. No breed of cattle possess such great qualities combined with such hardiness of constitution. They are grubbers and workers and are probably capable of turning more grass and rough forage into dairy products than any other breed of dairy cattle, the Kerrys of Ireland possibly excepted. Their long suit is cheese making, rather than butter or quantity of milk, which is owing to the greater amount of casein found in their milk than in the milk of most other breeds. For this reason also the Ayrshire's milk is found preferable to the Jersey's or Guernsey's by people who are unable to take the latter on account of their richness in butter fats. The only complaint and the only reason that has kept the Ayrshire of Scotland from becoming popular in America is they are rather short in the teat. It is unfortunate that many years ago it became the fashion in Scotland in their attempt to breed not only perfect shaped cows but perfect shaped udders, that the breeders in their zeal to produce square level vessels and small perfectly placed teats, carried the shortening of the teat a little too far. This objection in Scotland where the milking is done mostly by women and girls is not so serious as in this country where the milking is done mostly by men who require that the teat should be longer since their hands are larger. The Scotch breeders have, during the last few years, come to acknowledge their mistake and now with an eye to foreign demand they have turned squarely about and are breeding with a view to overcome this objection. It is not at the present time a difficult matter to select animals fairly good in this respect and by taking great pains and insisting on selecting bulls from cows with a good length of teat, the objection that has always been made in this country to the Scotch bred Ayrshire, is in a great measure overcome. There is one other objection by American breeders, which, in fairness, I should not neglect to mention, and that is that they find most of the Scotch cattle heavy hided (bad handlers) compared with the American bred Ayrshire. This point, although true, is not as much of a fault as it seems to be when we come to consider that in the very severe climate of Scotland it is necessary in order to protect the animal from the very severe weather that prevails during nine or ten months of the year. The descendants of the imported Ayrshire brought to this country, after a few generations at least, are found to possess quite as good handling qualities as our own American bred stock. In Scotland nature simply provides them with a coat, as it does the Highland cattle, consistent with the climate they are obliged to withstand. To the man who appreciates the highest standard in symmetry of form and dairy conformation he may look the wide world over and he will not find a breed of cattle so uniform in these respects as the Ayrshires of Scotland. Nowhere has the art and science of breeding for improvement been so carefully worked out as in Ayrshire. It has taken two hundred years or more of the most careful breeding to bring the modern Scotch Ayrshire up to her present exalted state of perfection, and the person who sees nothing in the breed but the dollars and cents to be obtained from such an animal at the pail will only find disappointment in such an investment, as he can buy

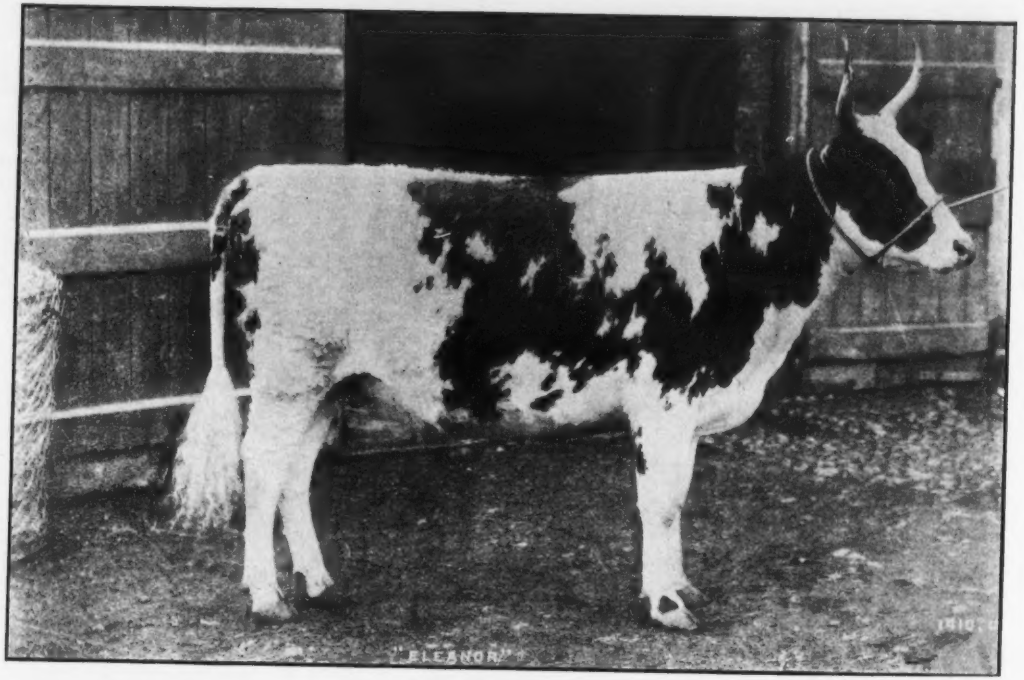
good dairy cows among other grades that would be more consistent with his idea of breeding. From a true breeder's standpoint, however, the Ayrshires as developed in Scotland, stand second to none.

The islands of Alderney, Guernsey and Jersey have produced two breeds of cattle, Guernseys and Jerseys, that have not only made the islands famous as producing the two best families of butter cows in the world, but they have brought hundreds of thousands of dollars to the Island farmers and probably millions of dollars to this country, in the development of our dairy productions. This article would be too limited a space in which to recount their praises to say nothing of their origin, history and wonderful achievements both in the show ring and at the churn. Judging from the questions I am usually asked I beg to submit the following brief sketch as answering some of the most important ones.

The Channel Islands, while off the coast of France and once belonging to that country, now belong to England. They are from one hundred to one hundred and thirty-five miles south of England and from thirteen to seventeen miles from the coast of France. They were formerly the private possessions of William the Conqueror, who in subduing England practically added that country to France. Afterwards when England regained her independence from France the Channel Islands instead of returning to the mother country, always remained loyal to England. Several times the French have attempted to retake these Islands but without success. A well known novel called, "The Battle of the Strong" was based on one of these fruitless attacks. The natives are all of French descent, French is the principal language of the Island, all the law courts are conducted in French. The schools, however, teach both French and English.

Alderney and Guernsey are off that part of France known as Normandy, while Jersey is off the coast of Brittany. There are many conflicting notions as to the origin of these two breeds of cattle, the Islanders have various traditions in regard to shipwrecked vessels and the washing ashore of cattle, etc. My own idea, and I give it as the most reasonable one to advance (though I have never heard it included in the theories set forth by the Islanders) is that since it is such a short distance from the mainland of France to the Islands, it is presumable that they received their cattle from the nearest point to the mainland, probably in fishermen's boats or it may be possible long before that, when tradition says the islands were once a portion of the mainland. This being true the Guernsey cattle would naturally come from Normandy and the Jersey cattle would naturally come from Brittany. This theory is borne out in the fact that the Guernsey cattle to-day, resemble the native Normandy cattle in many respects, while the Jerseys as closely resemble the native cattle of Brittany. In the Guernsey we find the white shield in the face and occasionally the brindle markings which characterize the Normandy cattle to this day. The color of the Guernsey is more uniform than the Normandy cattle and as a breed they are smaller. The Jersey likewise throws back every now and again to animals with pure Brittany markings, brown or black with a fawn list down the back and a white rim around the muzzle.

For many years there was a mutual exchange, at least of bulls, between Jersey and Guernsey which are seventeen miles apart. The present day Guernsey therefore, seems to be of Normandy descent with a Jersey-Brittany cross, while the Jersey is of Brittany descent with a Guernsey-Normandy cross, or in other words: both the Jersey and Guernsey are the indirect results of crossing the Brittany and the Normandy. The Normandy cattle are about as much larger than the Guernseys as the Guernseys are larger than the Jerseys, and the little Brittany cow is as much smaller than the Jersey as the



Courtesy of F. S. Peer

ELEANOR
Two-year-old Ayrshire heifer

Jersey is smaller than the Guernsey. There came a time over one hundred years ago—some claim it was nearly two hundred years—when Guernsey and Jersey fell out as neighbors; Guernsey, as the story goes, forbade Jersey to send any more cattle to Guernsey, the Guernsey farmers claiming they were too small, that they were only a detriment and they would have no more of them. Jersey retaliated by saying: "We prohibit cattle from the Island of Guernsey landing on our shores, they are coarse, ungainly brutes and we warn you if you bring any more over here they will be killed." Someone, it is said, was caught at making an exchange, claiming he had brought his cattle from the mainland. Then Jersey and Guernsey both passed laws prohibiting any cattle of any description coming to either Island, no matter where they hailed from. From that day there has never been a live animal landed at either Island except for slaughter, and no animal that has ever been exported from the Island has ever been allowed to return. The only exception to this was that Guernsey, several years ago, permitted one of their Islanders to exhibit his cattle in England, under severe restrictions that they were to be returned, they soon repudiated this ruling as the herd so exhibited in Great Britain and returned to the Island, was the first and only one on the Island to have tuberculosis.

While speaking of tuberculosis I may add that of over one thousand head of Guernseys and Jerseys which I have imported from the Islands, I never had one re-act to the tuberculin tests. Dr. T. A. Geddes, the U. S. V. S Inspector, claims the Islands are absolutely free from this disease.

The Island of Alderney is the first to be sighted enroute from England. It is about four miles long and two miles wide. The cattle on the Island are all Guernseys, they are therefore eligible to be recorded there and in England, also in this country under certain restrictions, the same as if they were born on the Island of Guernsey. There is, therefore, no such thing properly speaking, as an Alderney breed of cattle; it is only correct to say that there are Alderney bred Guernseys. How all the Channel Island cattle that first came to this country came to be called Alderneys is a mystery. There are no steamers running direct to Alderney from the mainland. The only way to reach there is by a little boat that runs between Guernsey and Alderney two or three times a week. Adjoining Guernsey are the Islands of Sark and Yeddo, on both of which are also found Guernsey cattle, both much smaller Islands than Alderney.

The beautiful Island of Guernsey, "The Pearl of the Sea," lies south of Alderney about seventeen miles; it is about seven miles long and three to four miles wide, having about six thousand head of cattle. It is probably the most productive Island in the world, the farms average about five acres and the export trade of the Island amounts to about four hundred dollars per acre for every acre cultivated, to say nothing of what is consumed by the native population which is about forty thousand, and some forty to fifty thousand visitors that come there yearly for an outing, a vacation, or their health. As to the cattle themselves, they are without question, the best all round milk and butter breed that has ever been produced. For a fancy bottled milk trade their product is unsurpassed, being naturally more highly colored than that of any other breed. The whole milk as it comes from the cow has nearly the appearance of being pure cream. This rich color, as some suppose, is not an indication of real cream of butter fat, but is simply the naturally high color of the product as it comes from the cow. For the same reason the butter of the Guernsey cow, is as a rule much more highly colored naturally than that of any other breed. The tallow of the Guernsey when exhibited on the butcher's block, shows throughout the same high color in excess of all other breeds.

In comparison with the Jerseys they are from one to three sizes larger. Some people seem to think that because they are larger they are correspondingly more robust or stronger in constitution. This is certainly an error. There is no difference between the two breeds in this respect. It is a mistaken notion, though altogether a very common one, that size and constitution are synonomous. If this were true even to a very limited degree, the deer, the gazelle, the antelope and the roebuck would be so lacking in constitution as compared with the moose and the elk that they could only exist under the most favorable climatic conditions whereas the very reverse is the case. It is therefore, only a mistaken notion often repeated, and one that breeders of Guernseys are often heard to make in comparing their favorites to the Jerseys. I mention this in justice to the Jerseys and advise my Guernsey friends to omit this kind but unfair comparison when discussing the merits of the two breeds.

Where as a breed the Guernsey cow fails in comparison with the Ayrshire or the Jersey, is in symmetry of form; they have not had the attention paid to them in this respect that they deserve. The Guernsey Islanders, long years ago, were overtaken with a craze for building glass houses for growing winter vegetables. This paid well, and the more they devoted their attention to glass the less time evidently they gave to their cattle. Their neighbors on Jersey fortunately for their cattle, have never had their minds thus distracted. I am not saying this disparagingly of the Guernseys but to state fairly the facts as they exist. However faulty they may be as a breed in shape of udder, and whatever may be said of the fact that many of them have sloping rumps and run to coarseness, still these facts, glaring as they sometimes are, are only what other breeders have to contend with and correct in their breeds. There is, therefore, no reason in the world to doubt that the Guernsey, had she received the same attention and care as to her selection and breeding, she would have been as high class in this respect today as the other breeds, or at least far beyond what she is today. I predict that when the great dairy merits of the family come to be acknowledged, she will fall into the hands of enough skillful breeders to elevate her to the place she deserves in symmetry and beauty of form and all that goes to distinguish an animal as a perfect specimen of a breed. The best place, however, to do this is on the Island of Guernsey, where the animals are confined to a very limited territory and if the farmers were united they could accomplish more than ever can be obtained by promiscuous breeding outside.

I am pleased to report that never during the twenty-seven times I have visited the Island have I found such an awakening among the farmers on this point as during my last trip. I have attended their annual exhibitions many times but I believe it is fair to say I never saw a better show there than they had in 1909.

The Island of Jersey is about seventeen miles to the south of Guernsey and is as much larger than Guernsey as Guernsey is larger than Alderney. The Island of Jersey is about fourteen miles long and four to seven miles wide, there is about twenty-two thousand acres on the Island under cultivation. The average size farm is eight and a half acres, the number of cattle about twelve thousand, population fifty-five thousand, annual visitors forty to fifty thousand. The Island farmers produce nearly sufficient food to provide for their own people and their guests excepting fresh meat and flour, and export from the twenty thousand acres between three and four million dollars worth of farm and garden products annually. This yield, I believe, has no equal for the same number of acres anywhere in the world. Twenty thousand acres is only a good size western ranch. Guernsey does better per acre but she has something like

seven hundred acres covered with glass houses for growing vegetables, crops and flowers. The Jersey Islanders have but little glass and obtain their immense yield from the naked fields. On an average size farm of eight and a half acres there will be found from seven to twelve head of cattle, two horses, pigs and poultry. The principal farm product is potatoes planted in January and February and dug in April and May.

There has been perfected a system of breeding on the Island under the management and auspices of the Royal Agricultural Society that has produced on the little Island a butter cow that may justly be called a queen. Although her family does not equal the Ayrshire in point of perfect lines, symmetry and carriage, although she does not give as high colored milk or butter as the Guernsey nor as much milk as the Holstein, and although as a family she is smaller in size than any of the dairy breeds, the little Irish Kerry and the native Brittany excepted, still in point of beauty and butter production she shines supreme, not only is she the most beautiful of all dairy cows but as a butter maker, pounds and firmness considered, she leads the list. There may be a cow now and then among other breeds which produces more than any single individual on the Island has done, but as a family, I believe it is safe to say that as butter makers the Jersey has no equal. Their small size has wrongly been held against them, as already shown in what I had to say about size and constitution when discussing the Guernseys. In no herd of cattle are the sexes so strongly contrasted. In the females we find the highest type of the feminine; in male the highest type of masculine. I have always maintained that the highest standard of the race can only be maintained by mating thoroughly feminine females and thoroughly masculine males. The fact that Jersey bulls are somewhat head-strong has been made much to their discredit. I do not mean by this that a man should select a coarse, ugly bull, that is one extreme. A bull that is feminine in disposition always seems to me to be the other extreme.

It has been my pleasure to make three quite large importations of cattle from Holland. While the Holland breeders have not gone in for forced records anything like the American breeders, they have paid decidedly more attention on the lines of breeding for individual merit. Our own breeders have been so carried away with milk and butter yields that they have greatly neglected their cattle along lines of more perfect form as to top lines, shape of udder and quality throughout that go to make the perfect animal in conformation and something to win with in the show ring as well as at the pail. The advantages of buying in Holland is that the Hollanders have kept nearer to and been trying to improve the general conformation of family type. Besides they have no special outlet for their cows, the bulls only going out of the country. On this account good individual animals, high scoring cows in conformation, can be bought there at very reasonable prices.

It is true they do not show as high a percentage of butter fat as American bred Holsteins, and no amount of feeding will increase the proportion of butter fat after they come to this country. But a greater yield of butter fat while it can not be fed into the animal, can be bred into it, by richer and higher feeding of the dams. Their descendants greatly improve in percentage of butter fat until after a generation or two the daughters from imported Holsteins are quite as high in this respect as American bred animals much further removed from imported stock.

THE FARM HOUSE

By L. H. Bailey

[An address delivered before the students in the New York State College of Agriculture, November 15, 1910.]

IT is my constant reiteration that country life affairs must be redirected. These affairs and interests are of two general kinds,—those that appertain to the community as a whole and those that connect directly with the farmer's personal life and business. All country life affairs have been inadequate as measured by their possibilities and by the expansion of civilization at large. Institutions and affairs become crystallized and stationary, and it is only by readjustment that we are to grow.

The process of redirection has actively begun in a number of country life institutions, so that we no longer need to point out their deficiencies so much as to aid to shape up the readjustment that is now in progress. That is to say, the forces are beginning to concrete themselves and to work out a solution. This is particularly true with the colleges of agriculture, the country school, the country church, the country highway extension, and the spread of means of communication. In other avenues, the redirecting forces have scarcely yet taken hold.

THE FARM PLAN AND THE HOUSE PLAN

On the side of the individual farmer, the process of redirecting his whole farm scheme is now well under way. By means of direction, aid, and sympathy, a new farm plan will work out, in cases where it is needed, although it will still take considerable time.

I come to you this morning to challenge your attention to the other factor in farming that needs to receive a new kind of thought. I speak of the farm residence.

Farming is a business system and like other business systems it must have a center. The center of the farm business is the residence. When we strike the farm house we strike the very center of rural life. It is just as much a problem to reorganize the farm house as it is to reorganize the farm itself.

Our farm houses were mostly built many years ago. The older ones were adapted to a former kind of country life and to a type of farming that is gradually changing. Many of our older houses are gradually falling down. Many farm houses are all that can be desired; but the larger part of the establishments in New York state must be either thoroughly remodelled or else rebuilt within the next twenty-five to fifty years. It is very important, therefore, that we do not follow old lines of house planning and construction.

Of course, I do not mean that the farmer is to discard his residence until such time as he desires to do so, and certainly not until he feels that his income warrants him to make a change. My point is that as fast as the farm houses are rebuilt or reconstructed, certain new features must be incorporated into them. Neither do I mean that the farmer must build expensively. A cheap house may serve its purpose in the class of construction to which it belongs, and it is as easy to make it convenient as to make it inconvenient.

The farm scheme has been largely traditional, fields being added as the forests have been cleared, and these fields tend to remain year after year. A modern farm management obliterates all unnecessary limits and lines and makes a new plan of the whole property. Similarly, the farm house has been very largely traditional in its plan and construction. A familiar type of house is the long upright-and-wing, with the kitchen at one end and the living rooms at the farther end, and with perhaps the cellar under the upright or parlor, necessitating much travel. Only a part of the house was warmed, so that the living was nearly all concentrated in the kitchen and one or two rooms adjoining it. Any

AN ATTRACTIVE AND WELL PLANNED FARM HOME. RESIDENCE OF T. B. WILSON, HALL, N. Y.

rambling type lacks the concentration that is needed in middle-class new houses of the present day.

The introduction of water works, the difficulty of securing household help, expense of heating, the removal of the handling of milk from the residence in many cases, and many other changes, have made a new design of farm house quite as essential in many cases as a new plan of the farm itself. I think that town houses need just as much to be redirected as country houses; but I am not speaking of town problems.

There has been a tendency in recent years, when new houses are to be built in the open country, to adopt city models. The house that is narrow and high of necessity in the city, and which serves city conditions very well, may not only be very gawky and unsightly in the open country but may entail much unnecessary labor in running up and down stairs.

WHAT A FARM RESIDENCE SHOULD BE

By way of concrete suggestions, I will throw my statements into classified paragraphs. These suggestions apply to common farm houses, rather than to the estates of country gentlemen.

(a) The farm residence should fit the farm country. Land is cheap; household labor is high-priced and difficult to get. The house should be broad and low rather than narrow and tall. We need a type of farm architecture that seems to grow out of farming conditions. That is, the structure must look like a farm house rather than like a town house.

(b) The house should be very simple in its general plan and construction. This is true of all houses, but particularly of country houses. The farm house should be condensed, whether it is large or small. A general absence of jigsaw trimmings, lathe work, gewgaws, and other mere ornamentation on the outside of the houses would not only eliminate a great deal of expense in original cost and in upkeep but would also relieve the structure of much that is commonplace and of no account. The beauty of a building lies not in its external

ornamentation, but in its proportions, its fitness to conditions, and in the materials of which it is constructed. Nothing presents a sadder appearance than a very much ornamented house when it once begins to become shabby and to go to pieces; and all merely ornamental work is short-lived, and requires constant attention to repairs and painting. A neglected simple house presents a very much better appearance than a neglected ornate house.

(c) The ordinary farm house should have a very simple roof scheme, with as few valleys and peaks and flashings as possible. The beauty of the house should lie in its dignified and simple sky lines rather than in its complex and broken features.

(d) The house should be planned to save steps to the utmost. It must be remembered that a residence is a working place. The kitchen, dining room, woodshed and cellar should all be within easy reach of one another. So far as possible, the rooms that are daily used together or between which there is very much travel, particularly on the part of the housewife, should be on the same floor with no steps up and down. We have not appreciated the fact that the woman's steps cost time and strength and, therefore, cost money. We should so plan a house that the woman may be able to save much of her energy for other activities than merely those of house keeping.

(e) The house should be so planned and made that it can be easily cleaned. This means absence of all elaborate spindle work, filigree, and also of heavy and upholstered hangings in the furnishings, and of useless corners and of eccentricities. Now that we are appreciating the relation of dust to health and disease, we must take a new attitude toward the construction and the furnishing of residences.

(f) The house should be constructed or remodelled with the idea of applying power to some of the household work, as to the laundry, pumping, eventually to the cleaning of the rooms and to other labor. We have been applying power to the work of the farm and the barn, but we have not adapted it to any great extent to the work of the house itself.

(g) Every modern house should have water running into it and out of it. Within twenty-five years every good farm residence, and even many tenant houses, will be as well provided with water supply facilities as are city houses. In fact, since the farmer can secure his water without paying water-tax or being subject to water boards, he ought to be able to control the situation much as he will.

(h) The ordinary farm house must be planned in such a way that the members of the family can do the housework. They do not depend on servants. I am sure that in many cases it is possible to reduce the work of keeping house by at least one-quarter or even one-third if the house plan is carefully studied with this idea in mind.

(i) You all know that most of the unexpected visitors to a farm house go to the back door or side door. This is because the woman and the family are at work in the rear of the house. There may be no servant to "tend" the door. This being the case, it is necessary that the secondary or back door entrance be much more important and convenient than it ordinarily is in a farm house. It means that the back of the house is to be as highly developed in some respects as the front. Perhaps it will mean in the end that there really is no "back" to the house at all, and that the establishment shall "face" all ways and have no unkept back yard.

(j) The house must be provided with ample storage space. Groceries are often bought in quantity. The winter's supplies are "put down" in the cellar. In many places this storage place should provide room to hold vegetables, fruit, and other supplies, that are to be sold. Ordinarily, the larger part of this storage is in the cellar or the attic. This necessitates many steps. It is a question whether a good deal of the material would not better be stored on the first floor

ANOTHER VIEW OF MR. WILSON'S HOME, GIVING BETTER VIEW OF THE COMFORTABLE VERANDA ON THE SIDE OF THE HOUSE.

with a place specially designed for it, like an enlarged closet.

(k) The first floor and the cellar are the centers of the family activity. The members of the family spend much of their time out of doors. This means that the first floor should not be approached by high steps from the outside, and also that wash-rooms and other service rooms should be on this floor and easy of access, and preferably near the farm-side entrance. The men from the barn or fields should not be obliged to run through the house to reach their conveniences.

(l) When additions are placed on an old house, care should be taken to have them match the style of the original. It is common to find old box-corniced houses with turning-lathe chicken-legged porches added to them; these additions always look out of place and sometimes are ludicrous. If left to the taste or whim of the ordinary carpenter, additions to residences are not likely to present a suitable appearance.

A DOZEN PROBLEMS

The above categories will suggest problems for the student to work on, but I will mention a few specific things for those of you who are interested in house planning to take directly into your class-work. Of course I do not assume that all these things are to be incorporated into one house (although it is perfectly feasible to do so), but while you are here you should work out one or two of them at least, for application at home, when you can afford it.

(1) Plan a water works system with a supply coming from an elevated tank in the barn or in the attic; from a pneumatic tank in the cellar; from a pneumatic cistern; from a creek or well or a spring at an elevation above the house; or from a hydraulic ram.

(2) Plan a compact room arrangement to allow a woman with two or three children to do her work without servants, and also to have some time for reading and for social activity.

(3) Consider how a hired man may occupy a room which has a separate entrance from the remainder of the family and yet which may be under family control.

(4) Plan the addition of out-door sleeping facilities. Add a fireplace to an old farm house.

(5) Plan a house with an accessible and attractive back door or work door entrance.

(6) Plan a lighting system either by acetylene gas, electric light, or other means that are now available. Extend this system to the barns, if practicable. Also devise a way to heat the house.

(7) Plan a plain work room or retiring room for the women of the family, particularly for the wife and mother. This should be a retreat room that is free from the cares and noise of the remainder of the house, containing perhaps a few books and other means of recreation.

(8) Provide an office that shall be the business nucleus of the farm scheme. The office should be of easy access on the first floor of the house rather than in the attic or in the barn. It would be easy to add such an office to almost any farm house. It should have an outside entrance as well as connection with the living rooms.

(9) Figure out a system of storage rooms that will take care of the family supplies, and also hold such products as need to be sold or handled from the residence, assuming that the family is six persons and the place a general farm of 100 acres.

(10) Plan the simplest and most compact arrangement of rooms properly to accommodate a family of six, on a 150-acre farm.

(11) Devise a system of light power that can be applied to household work, and indicate the kinds of work that may be effected by it. The plan may contemplate a water-power outfit, windmill, gas or hot-air engine, or an installation through electric wires.

(12) Plan a garden or yard that shall be a real supplement to the house. I do not now have in mind so much the raising of vegetables and fruits for the household supply as the providing of pleasant out-door spaces for reading, sitting, dining and the like. Every opportunity should be seized to get the farmer and his family out of doors, as contact with nature in the hours of leisure will add much to the resourcefulness of his life.

STANDARDIZED HOUSES

We very much need standardized plans for farm dwellings. Such plans would indicate the nature of the problem, how all the parts of the residence are related to each other and to the needs of the family, and to the needs of the farm.

We are now working out standard schemes of farm management. It is not expected that any plan will be literally followed by any particular farmer, but it is possible to study the principles that underlie a farm organization that shall be economically most feasible. Similarly we ought to have such a knowledge of the household necessities as will give us some rather definite working statements on the best general arrangement of rooms, the floor space per person, the size of the house in relation to the size of the farm, how large one kind of room may be with reference to another kind, the proportionate outlay that may be devoted to house and barn and to the farm. I do not have in mind the ready-made plans that we see in the public prints, but rather a set of working principles. A person ought to be able to apply these principles at the same time that he expresses his personal tastes and varies the plan in its details.

Such standardized plans are not likely to be worked out by practicing architects, because the fees in farm house work are so small as not to make the business profitable. It then devolves on society to make such studies, and to develop the work. That is, the government must do it through some agency. At present, the only agency that seems to be available is the system of colleges of agriculture in the different states. If it is true that the character of the

farm house is to have great influence in the redirecting of country life, then it is very important that every college standing for such redirection have a first-class Department of Rural Architecture.

OBJECT LESSONS ON THE UNIVERSITY LANDS

If all these points of view are well considered, then it follows that this College of Agriculture should begin, as soon as it can, to work some of them into actual farm houses. We have recently purchased a number of farms. They contain residences of the old kind. Some of them may be rebuilt. We shall need new buildings in other places. We shall, of course, need more buildings than a farmer would need because of the different kind of work that we are doing. We could use the extra rooms in many of the buildings for assistants' and students' quarters.

I have long wished that we might begin to erect different kinds of farm houses on our various farms to stand as suggestions and examples, ranging from the lowest price of farm houses to those of the larger size. Every house should be a standard in its class, with good sanitary conditions, water supplies, and a useful garden attached to it. Here is an opportunity for the expenditure of small sums of money that will be sure to give most excellent results. A building stands not a day, but year in and year out; it is a silent teacher, and its influence is greater than any of us are aware.

THE MENTAL PICTURE

As I said at the beginning, I do not expect all this to come quickly, or before its time. I want to challenge your attention, to get you thinking along uncustomary lines, and to set in your minds a new picture of home and efficiency.

THE BASIS OF SELECTION FOR DAIRY CATTLE

By W. R. Dunlop, '05

UP to within a few years we have been obliged to depend largely on the show yard as a guide for the improvement of our dairy cattle, but since the advent of records of production, we have another and very valuable index for selection. The question comes to us all, "Which is better?", and we reason, "Why not both?" In either case there are redeeming features, and either may be misleading.

The show ring furnishes us with the perpetuity of type. Here are assembled choice specimens of the breeds, pitted against each other for preference. Qualified persons interpret the standards of the breeds and we see in the winners the approved type. Here the perfect udder is considered, and vigor and form as we understand they should be, are given their due weight. The general symmetry of parts that are excellent in themselves makes the ideal animal.

On the other hand, we *know* of productive power only through records. These are of two classes: those for short time, and those for long time. We cannot give too much consideration to seven-day records. They are apt to be, and often are, very misleading. The really valuable records are yearly records and the business dairyman of today insists on all-the-year-around cows. So if we are breeding dairy cows, do we not miss our purpose if dairy production is not the one basis for selection? We must produce what the intelligent public wants if we are to make any progress as breeders.

Theoretically, these two measures of quality are harmonious. In actual experience we find wide discrepancies. How much of dairy function is due to

GUERNSEY COW, "HAYES ROSA"

Imported from Island of Alderney to England for Sir E. A. Hambro. Purchased later by Lathrop Ames, North Easton, Mass.
Courtesy of F. S. Peer.

form of udder? What per cent of our high record cows have perfect or even passable udders? I cannot answer that further than to say that we may go too far with this record selection in breeding and ignore type too much. We are reasonably sure that a deficient fore udder means deficient production in those quarters, the difference sometimes being almost beyond belief. We also believe that like begets like. Is it intelligent to go record crazy and forget that first of all we have a breed to perpetuate in its high form? What may be said of udder symmetry can be applied to other parts as well. One cow, I recall, held for years a first place in a certain class in her breed's records of production. She had a short drooping rump that was almost a deformity. Had a casual observer, not knowing the facts, seen this cow, she would have been a subject for slighting remarks. Yet her record sent one of her sons into a herd of very high-class cattle. Was this dairy wisdom?

But, though there be obvious discrepancies, there is a general relationship between dairy type (which does not interfere with breed type) and dairy production. How closely we are able to recognize this type is a question. It would be discouraging if after all these years of dairy farming we had not approached the producing type, and probably our comprehension of it is not far off. The cow that wins today has to come pretty close to the business farmer's cow. We are drifting away from those fads that have kept down progress and we are looking pretty generally to our goal: vigor first; type and production following. We are demanding business features and putting fads in the van. Useless features, among which are color of Short-horns, Ayrshires and Jerseys, are taking their place along with the black nose fright of the Guernseys. Instead of lawn ornaments, we are now thinking of how much refinement we want in the more robust animal that business favors.

There is one thing that is now being brought into use in the selling of cattle that is sure to become of even greater value than it now seems. Some breed associations demand it in connection with their records. That is the photograph. Next to actual inspection, this affords the best description of an animal. It is way ahead of a man-made score, which can never be made twice alike, even by the same man. This, coupled with a record, enables a prospective buyer to study the type and can do a vast amount of good in harmonizing records of performance and type.

One should always consider conditions under which records are made; there are records apparently creditable made by expert handlers that are not all they might seem. It is like a race horse or an athletic team, where often ninety per cent of the achievements are due to the trainer. Phenomenal records are good advertisements. What is better, however, is a plenty of good substantial records and the repeaters—those who do the trick over and over, are the kind of cows that we are trying to produce.

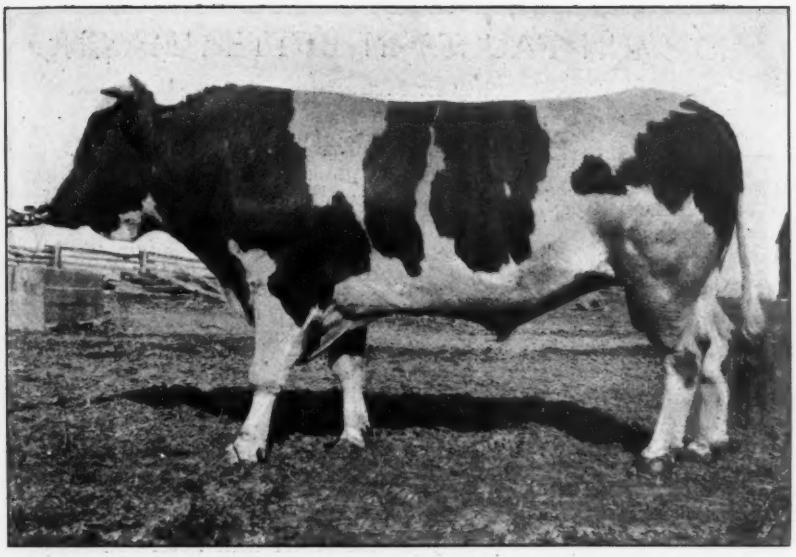
As breeders we must maintain a certain code of honor (which has not been lived up to completely). The buyer is usually a novice and depends on us for fair treatment. Is it fair to sell for a large price a bull from a beautiful cow that, although she can show with the best, may not be able to make two hundred pounds of butter in a year? Is it fair to sell a bull from a large record cow that is decidedly malformed? We must look beyond the dollars and cents and try to help boost the breed. In it there is a slight satisfaction that is variable according as we use our conscience in the matter.

Courtesy of American Guernsey Cattle Club

GUERNSEY COW "DOLLY DIMPLE"

Owned and bred by F. L. Ames, North Easton, Mass. One year's record, 18458.8 lbs. milk, 906.89 lbs. butter fat.

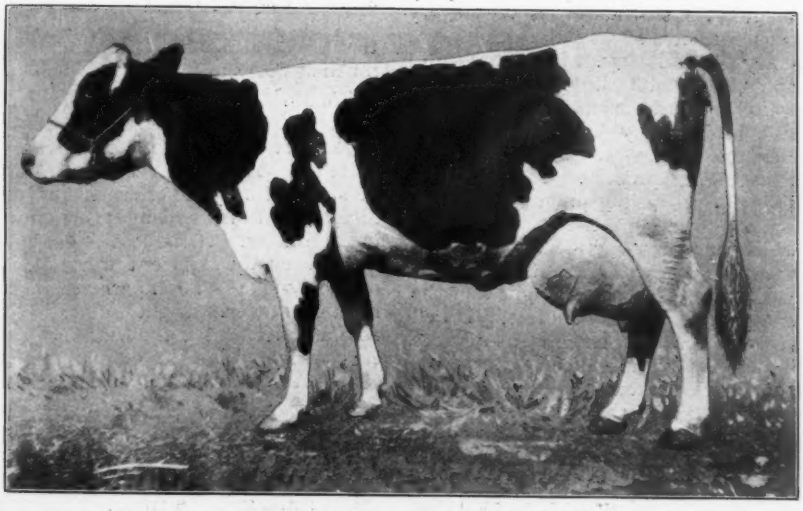
Courtesy of American Guernsey Cattle Club



HOLSTEIN BULL "KING OF THE PONTIACS"

Owned by Stevens Bros., Liverpool, N. Y.

Photo by B. Weitzer, Sr.



HOLSTEIN COW "COLANTHA 4TH'S JOHANNA"

Owned and bred by W. J. Gillette, Rosindale, Wis. One year's record, 27432.5 lbs. milk, 998.26 lbs. butter fat.

COMMON FAULTS IN BUTTER MAKING

By E. S. Guthrie

Instructor and Investigator, Department of Dairy Industry, Cornell University

N this article the writer will confine his attention to butter made on the farm

The following score card which is used by the butter dealers of our large cities and by judges at butter exhibitions, shows the relative importance of the different factors. Flavor 45 per cent, body 25 per cent, color 15 per cent, salt 10 per cent, and package 5 per cent. Now, what are the requirements of our markets and what are the common faults?

FLAVOR. The butter should have a pleasant, clean, creamy flavor. Some of the objectionable flavors are rancid, strong, old, cowy, barny, feedy, dirty, etc. Some of these flavors may be absorbed taints. However, most of them are of bacterial origin. Even the "cowy" flavor has been produced experimentally by bacteria. It is apparent that every butter maker must be a student of dairy bacteriology. If he has difficulty, he should study the probable sources of the bacterial contamination which may be: First, in the cleaning of the utensils. Second, in the milking process. Third, in the ripening or souring process. Fourth, in the draining of the buttermilk, which is a first-class bacterial food, from the butter. And fifth, in the wash water. If it is thought that the water is the source of trouble, it is well to boil it for a few churnings and note if there is any difference in the flavor. A great deal more might be said regarding flavor, the most important factor in butter making.

BODY. The butter should have a nice, waxy appearance. It should not be soft and greasy, nor on the other hand, hard and dry, for butter is used mostly for spreading on bread. In order to get a waxy body the temperature must be watched carefully. About 58° or 60° F. in the hand churn is right when other conditions are proper. It is noticeable that on many farms the cream is too thin. It should contain from 30 to 40 per cent butter fat. Well ripened cream with the desired fat content will churn readily to a nice clustered popcorn condition at the above temperatures and not be greasy. From this granular, popcorn condition which cannot be obtained with thin cream at high temperatures, the buttermilk can be drawn off easily. The importance of leaving the smallest possible amount of buttermilk in the butter has been noted. Now, wash the butter with water at from 54° to 58°F. This washing will take away more buttermilk. If the temperature is too low, the butter will be too hard to work and consequently it is likely to be tallowy. Also the salt is more readily distributed in the waxy butter. Sometimes it is necessary to use a lower washing temperature because of high room temperatures. Such temperatures should be avoided as much as possible.

COLOR. The color must be uniform and must suit the market in shade. It must not be streaked and mottled. The cream should always be strained into the churn to prevent lumps of curd from being incorporated in the butter. If the salt is properly distributed by sufficient working, no difficulty should be experienced with mottled butter. If the butter is too cold when worked, the working process is likely not to be completed, consequently the salt and casein will not be properly distributed and mottles will result. No consumer wants mottled butter.

SALT. The salt must be dissolved and it must suit the trade. Gritty or undissolved salt is never permitted in the highest scoring butter yet there is a great deal of it made in New York. If difficulty is experienced in dis-

solving the salt, partially dissolve it by placing it in a pail and just cover it with water of about 60°. Let it stand at least an hour. This will usually dissolve good butter salt sufficiently for it to be completely dissolved in the butter inside of 30 minutes after it has been worked.

PACKAGE. The package should bc neat and suit the market in style and size.

From observations made at the New York Educational Scoring Contests and at the New York State Fair, the writer believes that, excepting flavor which is usually difficult to control, that the most common faults in butter made on the farm that can be easily controlled are:

1. The use of too high churning temperatures, thus making greasy butter and incorporating too much buttermilk.

2. The use of too low washing temperature causing the butter to be too hard for proper working thus accounting largely for the improper distribution and dissolving of salt and the presence of mottles.

HOLSTEIN COW BELLE KORNDYKE AT 19 YEARS OF AGE.

A. R. O. records 25.77 lbs. butter and 509.8 lbs. milk in seven days. The foundation cow of the Korndyke family of Holstein cattle. Owned by Henry Stevens & Son, Lacona, N. Y.

F. E. ROGERS, SP. F. W. BELL, '11 S. G. JUDD, '11 PROF. H. H. WING

PROF. WING AND THE STOCK JUDGING TEAM OF THE NEW YORK STATE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY. CHAMPIONS AT THE NATIONAL DAIRY SHOW, 1910. WON THE SWEEP-STAKE TROPHIES AND THE CUPS OFFERED BY THE AMERICAN JERSEY CATTLE CLUB AND THE AMERICAN GUERNSEY CATTLE CLUB.

THE STOCK JUDGING TEAM

By F. W. Bell, '11

THE class in advanced stock judging which consisted of about twenty students began work last spring around April first. The class met once a week, on Saturday, a trip usually being taken to a herd in the vicinity of Ithaca, or by train to herds in other parts of the state. Among the herds and breeders visited in the state were: Guernseys, G. B. Tallman, Fayetteville, Otto W. Post, Ensenore, and Alfred G. Lewis, Geneva; Jerseys, E. W. Mosher, Aurora, Glenwood Farms, Ensenore, and Mekeel Brothers, Jacksonville; Ayrshires, W. P. Schanck, Avon, and F. S. Peer, Ithaca; Holsteins, E. A. Powell, Syracuse, Stevens Brothers Co., Liverpool, H. A. Moyer, Syracuse, E. H. Marshall, Ithaca.

The breeders have freely offered their aid in every way and the team owes much of its success to them. In order to turn out a successful team, it is very necessary that the College have this cooperation from the breeders. The animals of the College herd are pretty thoroughly gone over in the elementary judging of Course 1, and when the competition for the team begins, new animals to work with must be found. Through the kindness of various breeders, the students have been able to study some of the best animals of the breeds and the different types within the

breeds. These men being themselves expert judges, have given the students invaluable training through the points which they have brought out, the suggestions which they have offered, and the criticism they have made of the students' judgment. We were always most kindly received and cared for and the students will remember the visits to their herds with great pleasure. In considering the good gotten from such a competition as the students are engaged in, these trips cannot be overestimated. It brings one in touch with the leading men among the breeders who are always ready to give the students much valuable information as to how they have developed their herds, etc.—knowledge that they have spent a lifetime in securing.

At the close of the spring term, nine men were chosen from the class to compete this fall for the team. These men were F. E. Rogers, B. Weitzer, S. G. Judd, A. L. Thompson, W. H. Holloway, C. E. Mack, L. H. Schwartz, I. S. Brown, and F. W. Bell. Just before college opened this fall, these men were very agreeably surprised to receive an invitation to judge the live stock at the Chemung County Fair, all expenses being paid. The nine men all accepted and spent two days very profitably. Judging commenced again as soon as college opened, October second.

Tuesday, October 18th, Professor Wing picked the six men who stood highest, Weitzer, Holloway, Thompson, Rogers, Judd and Bell, and started on a two days' trip for the final selection of the team. The men first went to Preble, New York, where they visited Mr. Nyes' herd and later in the day, Mr. Knapp's. They went to Syracuse that evening. The next morning they went to Mr. Tallman's place at Fayetteville, and returning to Syracuse, visited Mr. Powell's farm. The final cut was now made and the team composed of F. E. Rogers, Sp., S. G. Judd, '11, and F. W. Bell, '11, left for Chicago, arriving there the next forenoon. In the afternoon Professor Wing and the team went to one of the World's Championship series of baseball games.

The next morning, Friday, October 21st, at eight o'clock, we reported at the Coliseum, where the National Dairy Show was held. Seven teams of three men each were gathered there to engage in an intercollegiate contest in judging dairy cattle. The following institutions were represented: New York State College of Agriculture, Cornell University, Ithaca, New York; Ohio State University, Columbus, Ohio; University of Nebraska, Lincoln, Nebraska; Iowa State College, Ames, Iowa; Kentucky State University, Lexington, Kentucky; New Hampshire State College, Durham, New Hampshire. The University of Minnesota, St. Anthony Park, Minnesota, was entered but because one of its members unwittingly violated one of the rules of the contest by going to the Coliseum the previous day, the team was not allowed to compete, but the two remaining members competed for individual honors.

Mr. B. H. Rawl, Chief of the Dairy Division of the United States Department of Agriculture, who has charge of the student competition, read the rules to us. These rules are very strict and are lived up to to the letter, so that there is absolutely no chance of unfairness or crookedness. The men were divided into squads of about six men each, one of Chief Rawl's assistants being put in charge of each squad, who remained constantly with the men to see that the rules were not violated. No two men of the same team were in the same squad, so there could be no chance of team work. A ring of four bulls and a ring of four cows of each breed were judged with the exception of Ayrshires, of which only cows were brought out.

Guernseys were the first breed taken into the ring and two of the squads began work, one on the bulls and the other on the cows. We were given two small cards, one for notes and the other for placings. The animals were

first led around a couple of minutes and then the students were allowed to examine them more closely. Fifteen minutes was allowed to judge a ring and then the students changed rings, those having judged bulls taking the ring of cows and those having judged the cows taking the ring of bulls. The squads are again given fifteen minutes in which to place the second ring. At the end of this time, these two squads left the arena and were given fifteen minutes for writing the reasons for the placing of each ring. Meanwhile the other two squads were judging the animals. After all four squads have judged the animals, the committee of official judges upon whose judgment the students were rated, placed the animals and took such notes upon them as they might need in considering the reasons of the students. This committee of judges was composed of Charles L. Hill and Frank H. Scribner, both of Wisconsin, and Professor W. J. Fraser of the University of Illinois. The contest was not finished until about five o'clock in the afternoon. A group picture of the contestants was then taken, and in the meanwhile the fellows got acquainted and discussed the day's work.

Throughout the contest the spirit of fair play was apparent and the students showed much commendable enthusiasm in their relationship to the affair. At no time since these annual contests began has anyone questioned the fairness with which they have been conducted and there have been no unsavory rumors concerning anyone identified with them. This is very gratifying as a guarantee of the future development of these contests. Much credit for the high character of these contests is due to Superintendent Rawl and his staff of assistants. These contests have been most efficiently and admirably conducted.

Contests of this sort create student pride and enthusiasm and result in better work in general on the part of the college man. The various trips that are taken to the breeders' herds, and the final contests at the National, bring the college, the students, and the instructors into sympathetic touch with the stock breeding constituency. An important phase of educational work is thus brought before many men who would not otherwise note it and their interest and assistance in building up college departments that are giving such training is thereby secured. Such educational work impresses the practical man and he sees the worth of the college and brings his influence to bear in its behalf.

The next morning we returned to the Coliseum and spent some time looking the Show over. There were about five hundred head of cattle. Where we had disagreed on the animals we were anxious to look them over again and get Professor Wing's opinion on them. After looking the cattle show over thoroughly, we turned our attention to the exhibit of dairy machinery and appliances, which was very complete. We spent the afternoon visiting Swift's packing house and the stockyards. We also spent some time in the Horse Sales Stables and the Dexter Park Pavilion, where the International Live Stock Show is held.

Eight o'clock Saturday evening found the competing teams with their professors again gathered together at the Coliseum to hear the results of the contest. The first breed announced was the Ayrshires, which was won by Missouri, New York being a very close second. Judd of Cornell made the individual high score in Ayrshires.

The next breed announced was Guernseys, and the silver trophy cup came to New York. Bell of Cornell received the high individual score of this breed.

Holsteins came next, the cup going to Ohio.

The Jersey cup now remained to be awarded and everyone was mighty anxious to see which team would get it, for the leading teams appeared to be rather close in the race for the sweepstakes trophies. After what seemed considerable suspense, to the teams at least, this was awarded to

Cornell, this being the second year in succession that New York has carried it home. Rogers of Cornell was the high man in Jerseys. We now began to hope that the two sweepstakes trophies might be added to our list and our hopes were soon realized. These are two magnificent silver cups, one being offered by the National Dairy Show and the other by Hoard's Dairyman. So of the five silver cups offered, the Cornell team brought back the two breed cups, Guernseys and Jerseys, and the two sweepstakes cups, the other breed cup, the Holstein, being won by Ohio State University. A detailed report of the contest follows:

Ayrshires

High team: University of Missouri with 534.99 points out of a possible 600.

Second team: New York State College of Agriculture with 514.99 points.

Third team: University of Nebraska with 495.33 points.

High man: S. G. Judd, New York State College of Agriculture, 183.33 points out of a possible 200.

Second man: H. P. Mayhew, Iowa State College, 181.66 points.

Third man: A tie. R. C. Emerson, University of Minnesota, 180 points. A. C. Page, University of Missouri, 180 points.

No trophy was offered for competition in judging this breed.

Guernseys

High team: New York State College of Agriculture, 952.65 points out of a possible 1,200. This team won the silver trophy cup offered by the American Guernsey Cattle Club for the team doing the best work in judging Guernseys. This cup, which represents a Guernsey milk pail in design, must be won three years in succession by a college to become its permanent property.

Second team: University of Missouri, 902.98 points.

Third team: University of Nebraska, 884.64 points.

High man: Floyd W. Bell, New York State College of Agriculture, with 355.99 points out of 400.

Second man: C. D. Stearns, New Hampshire State College, 347.99 points.

Third man: S. G. Judd, New York State College of Agriculture, 320 points.

Jerseys

High team: New York State College of Agriculture, with 899.98 points out of 1,200 This team won the silver loving cup offered by the American Jersey Cattle Club for the best work of a team in judging Jerseys. To be retained it must be won three consecutive years.

Second team: Iowa State College, 851.64 points.

Third team: University of Nebraska, 844.99 points.

High man: Francis E. Rogers, New York State College of Agriculture, with 331.66 points out of a possible 400. As Mr. Rogers was a special student in the college he was not eligible for the scholarship of $400 offered by the American Jersey Cattle Club to the man doing the best work in judging Jerseys.

Second man: Ivan McKillip, University of Nebraska, 328.83 points. The $400 scholarship was awarded to Mr. McKillip. This money must be used for post-graduate study.

Third man: T. B. McNatt, University of Missouri, with 306.66 points.

Holstein-Friesians

High team: Ohio State University with 933.32 points out of 1,200. This team won a large silver trophy cup offered by the Holstein-Friesian Association of America for the best work of a team in judging Holstein-Friesians. This to be retained permanently must also be won three years in succession.

Second team: Iowa State College with 926.64 points.

Third team: New York State College of Agriculture with 923.30 points.

High man: T. B. McNatt, University of Missouri, with 358.33 points out of a possible 400. Mr. McNath won the $400 scholarship offered by the Holstein- Friesian Association of America for doing the best work in judging this breed.

Second man: H. P. Mayhew, Iowa State College, with 351.66 points.

Third man: S. G. Judd, New York State College of Agriculture, with 340 points.

Total Ratings

The total scores made by the first three teams and three highest men, on all breeds, are as follows:

High team: New York State College of Agriculture, 3,290.92 points out of 4,200. This record gave this college the silver sweepstakes trophy offered by the National Dairy Show Association, and also the sweepstakes trophy offered by "Hoard's Dairyman" for the best general work.

Second team: University of Missouri, 3,182.94 points.

Third team: University of Nebraska, 3,109.94 points.

High man: T. B. McNatt, University of Missouri, with 1,151.98 points out of a possible 1,400. Mr. McNatt also won the special prize of $50 offered by the National Dairy Show Association.

Second man: S. G. Judd, New York State College of Agriculture, 1,139.98 points.

Third man: H. P. Mayhew, Iowa State College, 1,128.31 points.
Fourth man: Ivan McKillip, University of Nebraska, 1,117.31 points.

Teams Participating in the Contest	Points
New York State College of Agriculture	3290.92
University of Missouri	3183.94
Nebraska Agricultural College	3109.94
Iowa State College	3109.25
Ohio State University	2923.26
College of Agriculture, Kentucky State University	2912.26
New Hampshire Agricultural College	2830.94

More men should enter the competition for the team, for the training received in such work is excellent. The powers of quick and accurate observation and judgment, and retentive capacity of the mind are wonderfully developed. A person must be able to see wherein the many parts of each animal are good or bad and hold these in his head to compare with each of the other animals in the ring. These are intellectual efforts of splendid character. The team must bring the Jersey cup back again next year. We have won it twice now in succession and a victory next year will bring it to the college permanently.

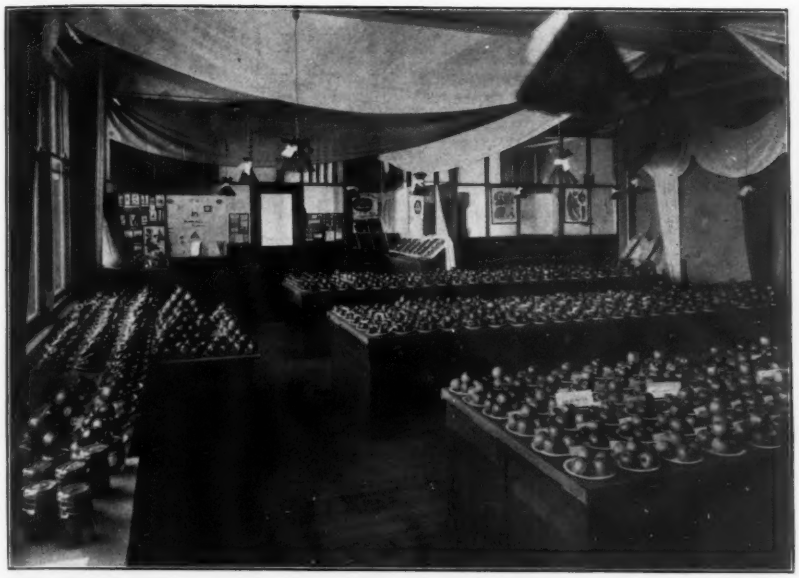
The great need that the college and students feel in the preparation for this contest is for more actual show ring practice. This can be secured only through the cooperation of the fairs. A very commendable example was set this year by the Chemung County Fair, and let it be hoped that this will be followed by others the coming fall. The very best of training could be secured at the State Fair if arrangements could be made to allow the students to judge some of the rings before the official judge passed on the animals, and the students could then be rated upon their placings. Of course, this could not be done with all the rings, as it would necessitate too much delay, but if the rings of aged bulls and of aged cows, of the four leading dairy breeds were gone over by the students, the very best of preparation would be given them, and a very good index as to their ability would be secured by their instructor. Last fall this scheme was tried at the Brockton Fair by some of the New England Colleges and proved highly successful.

The success of this and previous Cornell teams must in a large measure be attributed to the excellent training that they have received from Professor Wing. And it is the unanimous expression of the men composing the team that their work and associations with him have been the pleasantest of their college course. We will always look back upon the time spent in this competition, and particularly upon the trip to Chicago when we became so much more closely connected with him than one can in the class room, as one of the most pleasant and profitable times we have ever spent. Our only regret is that we cannot go with him next year. Let me say to the men who do go that they will feel a hundred fold repaid for their efforts whether the team be first or last.

THE FOURTH ANNUAL FRUIT EXHIBIT

By D. G. Woolf, '12

PERHAPS Professor Wilson's visit to the West gave our fruit show a national aspect, perhaps more people in New York State are engaging in horticultural work, perhaps the fact that the exhibit was to be specialized with especial reference to pears and apples attracted the growers of these important fruits. At any rate, the show far eclipsed previous ones and earned the honor of being the finest, from the educational standpoint, of its kind ever held by an agricultural college in this country. For days before, fruit from the east and west, north and south, fruit large and small of all varieties and sizes, with all kinds of variations and special



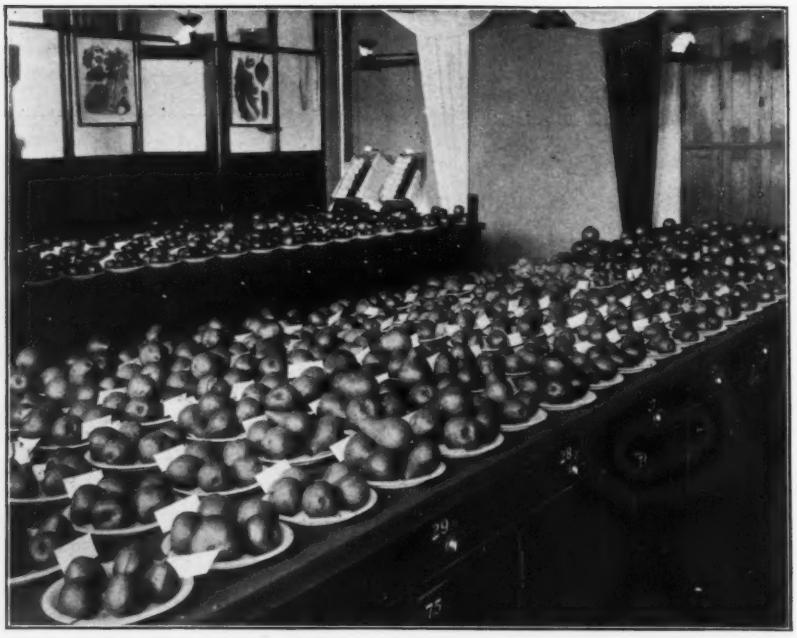
A GENERAL VIEW OF THE FRUIT EXHIBIT

features, but all in good condition, poured in upon the various committees in charge of the show. These had to be unpacked and graded, arranged on the tables and labeled; the Cornell colors had to be draped around the room and halls, and general preparations for the conduct of the show had to be made. Such an abundance of fruit was there that during the three days of the show it continued to come in, and much of it had to be left out because of lack of time and space.

The exhibit lasted from November third to November fifth and during that time about a thousand visitors viewed the display. On the evening of November third, the regular monthly assembly was held, and during the entire evening the exhibit room and halls were thronged with interested spectators. Due to Professor Wilson's knowledge of how to obtain the best effect in arranging fruit, the visitors were not only instructed but also enjoyed an artistic sight for there is no doubt that the room presented a striking appearance.

The apples were, of course, the main part of the show. From the large brilliant Ben Davis down to the small, unattractive russet, the specimens there made up a collection which probably was never duplicated in any one exhibit. Arrayed against our fruit from New York, Pennsylvania, New Hampshire and the other states of the East, were the apples from the West, Hood River Valley, California, Colorado and other states. Student judges, under the guidance of Professor J. P. Stewart of the Department of Horticulture of Pennsylvania State College, considered long and carefully the relative merits of the eastern and western varieties, but their report was needed only to strengthen, not to inculcate the belief in the mind of each visitor that we can accept the challenge of our brethren of the Far West, and not only equal them but outstrip them in many particulars.

But we have much to learn and they can teach us one very important fact. It is based on a simple economical truth and yet the lesson is one which



PART OF THE EXHIBIT OF PEARS

we have got to appreciate and assimilate before we can prevent western fruit competing with us in our own market. The truth is this: With all the scientific knowledge and higher agriculture which the present day offers, with the best and most productive soil in the country, with a natural love of nature and her sphere, we cannot be practically successful unless we incorporate into our farm work a simple business foresight—the ability to put up our produce in the most attractive and saleable form. The poultryman finds that he must learn this; the truck gardener needs it, and above all, it is vital to the success of a horticulturist. So from the neatly wrapped and boxed apples from the Hood River Valley, every New York fruit grower can learn a valuable lesson, one which he must learn now by example or later by costly experience.

The lesson taught by the exhibit is two fold; first, right here in New York State we have advantages equal to any other fruit growing section; and second, the eastern growers can learn a lesson from the western growers, which is this: Secure better packing methods; first, by grading or sizing all fruit for either box or barrel; second, by packing fancy varieties in boxes; third, by more careful handling of all fruit to avoid bruising.

Vieing with the apples in importance were the pears. Over sixty varieties were to be seen, fifty-one of which were in one collection, sent by Messrs. Ellwanger and Barry, of Rochester, New York. Another valuable collection, commercially, was sent by Mr. D. K. Bell, also of Rochester. This was a unique exhibit, one not often to be seen. Each variety was at its very best and a novice had a good chance to get acquainted with the various specimens. A few plates of grapes and persimmons lent additional color to the exhibit.

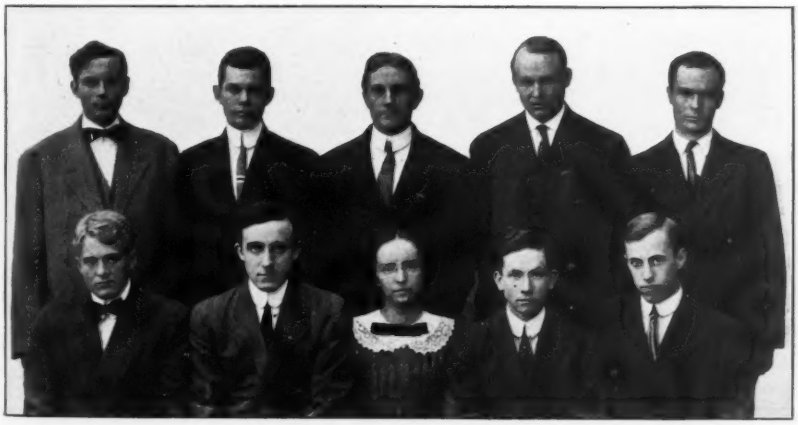
Besides the fruit itself, there were several important "side-shows." The exhibit by the Department of Plant

Pathology was especially instructive in showing the form and control of fruit diseases. The application of Lime Sulphur, which was such a valuable part of last year's exhibit, was extended to the application of Lime Sulphur and Arsenate of Lead. The injury accomplished by Bordeaux was well illustrated. The exhibit of the Department of Entomology, showing the work of fruit tree insects, was of equal importance. To appeal to the housewife and the epicure was the exhibit of the Department of Home Economics, showing the wonderful transformation that can be made in fruit to render them in a suitable shape for the table.

The Fruit Show has a message to every student in the college, every farmer in the State. The message is all-important to both. To the young man contemplating a launch into horticultural pursuits, the message is one of warning. It is not to underestimate the farming in the other half of our country, but rather to sober down to its right shade the glowing picture of the "Golden West," which is imprinted on the minds of so many prospective farmers. It is to show the advantages of fruit growing right here in our own state. To the farmer, already settled in the East, who leans on his hoe in the hot sun and thinks with dissatisfaction of his life here in the East, and as he watches the express train fly westward, wishes that he too might journey to the Land of Fortune, it offers a message of hope and encouragement. It shows how, by scientific knowledge and business ability, he can compete on the same ground with his western friends of such greater reputaion.

To the fruit grower who watches the ever present diseases and insects demolish his crop, the exhibit offers intelligent help. The manual labor of fighting these pests can be greatly lightened by a little knowledge of their habits and their vulnerable points. This knowledge is free. The show helped to inform him of this fact.

The Fourth Annual Exhibit is but a memory. Its existence was short and of comparatively small repute, but we wonder if we cannot feel assured that the constituency gained by it in the interest of more profitable horticulture will not make itself felt over a wide area, and if a step, no matter how small, has not been taken in the great stride toward a wiser, saner agriculture.



FRUIT SHOW COMMITTEE

Top row—Auchter, Evans, Stewart, Professor Wilson, Knapp
Bottom row—Tenny, Wooster, Miss Jenkins, Hardenburg, Buchholz
(Morrison absent)

The Cornell Countryman

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W. G. STEPHENSON - - Alumni Notes Editor
W. H. FRIES
D. G. WOOLF
A. H. WHITE - Associate Editors
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DECEMBER, 1910

A Dairy Number

This issue is mainly devoted to the discussion of subjects related to dairying. The articles deal with cooperation among dairymen, selection of breeding animals, manufacturing dairy products, localities adapted to dairying; in general a discussion of the dairy industry and its needs.

We have intentionally avoided breed controversy because we consider no breed to be *best* under all conditions but that each breed has distinct advantages for certain definite purposes. It has seemed better to publish one general discussion of the four leading breeds of dairy cattle and to present throughout the issue pictures of some of the best individuals of these four breeds.

The dairy industry is capable of enormous development and we are confident that the contributors to this issue will offer many suggestions which if followed out will bring advancement.

To the "Shorthorns"

Before this issue appears the Short Course students will be with us. To these students the CORNELL COUNTRYMAN extends its most cordial welcome.

Different from our freshman classes these students enter in the midst of our term's work. Coming at this time their position in our college organization is unique. They bring with them great enthusiasm and the whole college feels the difference in atmosphere. We urge the Short Course students to keep their enthusiasm within proper bounds and to direct it towards their own improvement and thus, as a logical result, for the good of the institution.

Further—although here for but a short time, you are registered as special students in Cornell University. This privilege carries with it responsibilities which we hope you are willing to assume. The first of these is to do your class work well. Then be a good fellow and become acquainted with every other "Shorthorn" here, and with as many long course students and members of the faculty as possible. Attend the monthly Assemblies, the meetings of the Agricultural Association and those of your own Departmental club. The College of Agriculture holds an annual banquet which the Short Course students have always well attended; your support is likewise expected this year. We feel, also, that the CORNELL COUNTRYMAN is worthy of the support of every student and expect you to subscribe. Above all, we expect you to be careful of the appearance of the college buildings and property, the use of which is entrusted to you for a time.

If the proper spirit of co-operation and good-fellowship exists between the long and the short course students, as it will exist if each does its part, both will be the gainers for the short time they have spent together.

The Women and the College

The CORNELL COUNTRYMAN takes the greatest pleasure in commending the worthy student activities in this College of Agriculture. We were greatly pleased with the recent proposal from the women in the senior class in agriculture that they prepare the annual class banquet, the men to provide the needed materials. Likewise commendable was the enthusiasm with which the men of the class accepted the suggestion. We understand that in the near future the young women in the junior class will place a similar proposition before their classmates and we anticipate an equally cordial response.

The young women are a very important part of this institution and with the completion of the new Home Economics building will undoubtedly be a large proportion of the total registration. This spirit of cooperation and good fellowship between the men and the women is an important factor in our social life and the COUNTRYMAN stands ready to further the spirit in every way within its power.

Stock Judging

Two years ago the New York State College of Agriculture sent its first stock judging team to compete in the Intercollegiate Stock Judging Contest at the National Dairy Show. This team secured fifth place. Last year's team took second place, the team this year brought home the championship, winning four out of five trophies offered. The history of stock-judging at Cornell is a story of steady progress. It must continue so.

Let us urge the students in this college not to rest on the laurels of our successful team but rather to work harder, not only to attain but to exceed the high mark set for them. No instruction in this college is more profitable for a student than the stock judging work and the benefits far exceed the efforts. "Everlastingly keeping at it is the secret of success." If this is the motto and the practice of every student interested in animal husbandry we shall turn out another winning team next fall. We have a reputation to sustain.

Inter-College Athletics

The CORNELL COUNTRYMAN extends its heartiest congratulations to the Soccer team representing this college for its glorious achievement in winning the Soccer championship, and thereby the cup for one year, without losing a single game. The college owes considerable to the men of this team and to Coach Collado.

To the cross-country team we also extend our appreciation. Although not successful in getting quite to the top place, they worked just as hard and deserve as much commendation. We must support the teams that don't win as strongly as those that do.

The College of Agriculture now has a good even start for the intercollege championship. The next sport in season is basketball. For the past few years we have been very near the top in this activity but have lost at the finish by a very close margin.

This year let every able-bodied fellow get out and chase that ball around the Armory. Those of us who can't make the team can surely get on the side lines and cheer. Our duty is plain, let us act accordingly.

Cow Testing Associations

There is no one thing that will do more to revolutionize dairying than the formation of cow-testing associations among our farmers. In this issue, Professor Savage gives a very clear outline of the purposes and benefits of such associations and submits a definite plan of organization. We hope that everyone who reads this article will give serious thought to the plan and will pass the article on to another farmer to read. The benefit to be received from such associations is not merely the finding out of the production of each cow but as well the training that will come to the farmer in leading him to think out a plan of work before he begins. The CORNELL COUNTRYMAN very strongly desires to see at least one cow-testing association in every dairy county in the nation. We are confident that rural betterment will be the result.

GENERAL AGRICULTURAL NEWS

The November issue of the *Review of Reviews* gives a most interesting account of the Farmers Co-operative demonstration work carried on under the direction of Dr. Seaman A. Knapp of the U. S. Department of Agriculture. This work bids fair to revolutionize farming and farming interests in the South. The work was started in 1904 in order to combat the cotton boll weevil which had at that time just begun its ravages; its scope, however, has broadened until now it has for its object an increase in the yield of all the farm crops.

The work is supported by a Congressional appropriation, by a liberal fund from the General Educational Board, by State legislatures, and by private subscriptions of farmers and business men. Its growth has been phenomenal. From one agent in 1904 it has increased to 430 agents at the present time; from one farm to 60,000 farms and from one state to thirteen states. The method of the work is to persuade a farmer in a given section to cultivate an acre or two of a certain crop according to directions furnished by the government, "the ten commandments of agriculture," as Dr. Knapp calls them. The yield on the land cultivated according to government directions is frequently from 300 percent to 400 percent more than that obtained from similar land with the ordinary methods. This converts the farmer to the improved method and he at once begins to preach it to his neighbors.

* * *

In the October *Harpers' Magazine*, Dr. A. D. Hall, director of the Rothamsted Experiment Station, gives an account of experiments carried on at that station which show that the soil is full of certain animal organisms of the Protozoa type which feed on the beneficent ammonia-making bacteria. By heating the soil the Protozoa, which are much more sensitive than the bacteria were destroyed and the yield on soil so treated was doubled. When the soil was treated with chemicals that destroyed the harmful organisms the yield was increased 30 per cent. As ammonia is the most expensive fertilizer which the farmer has to buy and as a very large per cent of the ammonia in manures is now lost because of these harmful organisms the principle discovered by these experiments will have far-reaching influence when they reach the stage of practical application.

In the last ten years 9,771,512 aliens have arrived in the United States. Southern Italians lead in number, 1,761,948, Jews are second, 976,263. The average amount of money possessed by each alien was $22. Spanish-Americans were richest averaging $104 each, and Koreans poorest, $7 each. The Jews averaged $13 each. The immigration in the last ten years is more than the combined population of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, Delaware and New Jersey.—From the *Country Gentleman*.

Many of the farmers are complaining of the contract specifications for flour to be furnished the New York State Hospitals. The State Lunacy Commission advertises for bids for hard wheat flour. No reason is given for using hard wheat flour instead of soft wheat flour. Furthermore, it is stated that one-half of the people live on soft wheat flour. The wheat grown in New York and other eastern states is soft and would cost $10,000 less than hard wheat. This being so, why should not the State of New York buy the wheat grown by our farmers?

* * *

If anyone thinks automobiles are spoiling the horse market let him try to buy a good horse! He will be surprised to learn what is demanded. For the past ten years this cry of death to the horse business has frightened many eastern farmers out of a good opportunity. Their farms are ideal places for raising colts and they are close to the finest horse markets in the world. Yet in spite of these advantages our farmers have let the horse breeding business go largely to western farms. If western land can produce good horses and ship them 1,500 miles at a profit, what ought to be done in the east? What we need is more faith in business. There is a great opening for breeding the heavier type of carriage horses or horses for the army.

* * *

Sixteen state sanatoria, twenty-eight county hospitals, and twenty-one municipal hospitals for tuberculosis have been erected and provided for since January 1, 1909, says a bulletin of the National Association for the Study and Prevention of Tuberculosis, issued today.

Within the last two years the number of state institutions for tuberculosis has doubled, and the number of county and municipal institutions has increased from about 30 to 80. The expenditures of public money for the treatment of tuberculosis also has more than doubled. Not less than $3,000,000 of state money was appropriated for tuberculosis institutions in 1909, when 43 legislatures met, and over $600,000 in 1910, when only eleven legislatures were in session. The appropriations of countries and cities for tuberculosis hospitals and sanatoria in the last two years will aggregate fully $2,500,000, bringing the total of official appropriations for tuberculosis hospitals up to over $6,000,000 in the past two years.

In spite, however, of this good showing, the National Association for the Study and Prevention of Tuberculosis states that not one-tenth of the public provision for tuberculosis that is needed has been made. More than 250,000 tuberculosis patients are constantly without proper institutional treatment.

* * *

GRAIN TRAFFIC ON THE GREAT LAKES. (Press Notice for Bulletin 81.) Bureau of Statistics, U. S. Department of Agriculture.

The system of inland waterways formed by the Great Lakes has done much toward making better and cheaper service in the marketing of a large part of the grain crops of the United States. Deepening the lake channels has made it possible to use larger vessels, and with the increased size of the carriers have come lower freight rates. A review of the past forty years, covering the principal events in this growth of cheap transportation, has just been published by the Department of Agriculture in a bulletin of the Bureau of Statistics.

In discussing improvements in lake channels, the report shows that in 1871

the ordinary depth of water at the shallowest points between Buffalo and Lakes Superior and Michigan was about 14 feet, while in 1909 this depth had been increased to 21 feet. Deepening the channel was accompanied by the building of larger boats. During 1871–1875 the average size of the vessels built on the lakes was 193 tons, of 100 cubic feet gross measurement and the average size of those built in 1906–1909 was 1,232 tons. The lake boats built now are more than six times as large as those built when the channel was 7 feet shallower.

While the average cargo of grain received at Buffalo for a season may be less than one-half that amount, 400,000 bushels is not an unusual cargo to be shipped in one vessel.

One ship cleared from Duluth on November 4, 1908, with 413,930 bushels of wheat, and sixteen days later cleared again from the same port, this time with a cargo of 462,374 bushels of flaxseed and oats. Each of these loads, if carried by rail, would have required 10 trains of about 40 cars each.

Freight rates charged for carrying grain on the lakes are much lower than in the days of shallower channels and smaller boats. The average rate for wheat from Chicago to Buffalo had decreased in 1906–1909 to less than one-fourth the average for 1871–1875, and in the past several years a considerable number of shipments of wheat have been carried over the thousand-mile routes from Chicago or Duluth to Buffalo for as little as one cent a bushel. Railroad freight rates on grain have declined also during the period covered by the Department's bulletin; the average rate from Chicago to New York by all-rail routes has been, for the past several years, less than one-half of the charges of thirty-five or forty years ago. During this time, the size of the box cars, the kind used to carry grain, has increased three-fold.

The larger cargoes of the lakes do not pass through Welland Canal, its depth being but two-thirds that of the shallowest passages between Buffalo and Chicago or Duluth, so the shipments to ports on Lake Ontario and the St. Lawrence River are much smaller than those to Lake Erie. Of the total grain shipped by lake from Duluth (and Superior), Chicago, and Milwaukee during the past ten or more years, only about seven per cent was carried to Lake Ontario or the St. Lawrence River.

To ports east of Niagara, even allowing for the longer distance, freight rates on wheat are much higher than to ports on Lake Erie. From Chicago the rates to Montreal have for the past several years been about three times those to Buffalo.

A considerable number of tables are given to show receipts and shipments of grain at the different lake ports and the quantities carried over various routes.

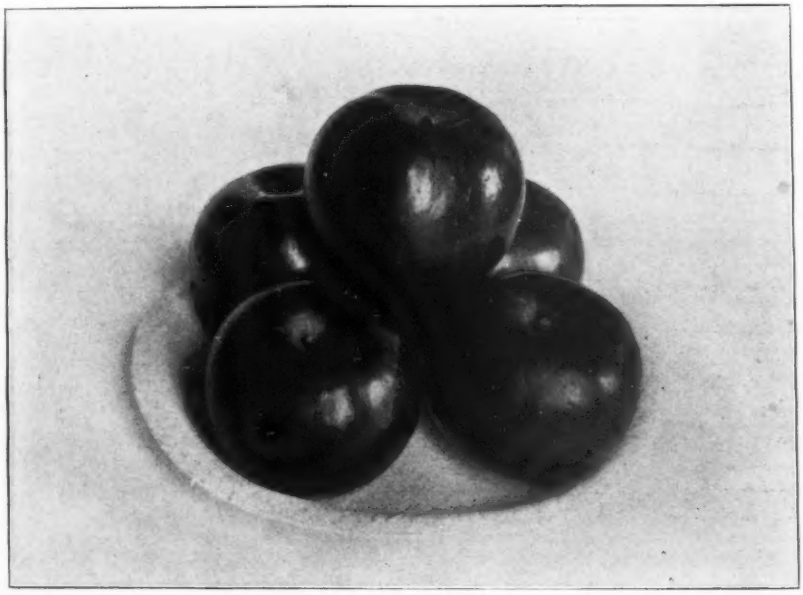
* * *

PRIZE FOR SCHOOLS—The Tuberculosis Committee of the State Charities Aid Association announced to-day tentative plans for one of the biggest prize contests ever conducted in this state outside of Greater New York. A vacuum cleaning plant for installation in a public school has been given as first prize by the McCrum-Howell Company of New York, to go to the city having the largest sale of Red Cross Christmas Seals. The only condition imposed by the donor is that the winner of the prize must be a public school. The second and third prize for the contest have not been decided upon, nor have the judges been finally selected. The prize will be awarded on the basis of number of seals sold per capita of school population.

In making the announcement the State Charities Aid Association points out that although contests among schools or school children are generally frowned upon by school men, it believes that a contest of this kind, which will necessitate the constant preaching of school sanitation, for a prize awarded to schools to improve school sanitation, and not to individual pupils, is not only justified, but is a powerful agent for educating

the public to an appreciation of the value of school hygiene. During the course of the sale it is hoped to have every pupil in the state, outside of school hours, constantly urging the advantages of breathing dustless air in the schools.

The State Charities Aid Association has been appointed agent for the sale of the seals in New York State outside of Greater New York. The slogan for the sale this year is "$100,000 for Tuberculosis in New York State." Last year the sale amounted to $30,000. With the school contest and other similar methods of pushing publicity for the sale, it is expected that the proceeds this year will more than treble those of last year.



A PLATE OF BALDWIN APPLES SHOWN AT THE RECENT FRUIT EXHIBIT

CAMPUS NOTES

The College of Agriculture made a big stride toward the intercollege championship by making a clean sweep of the soccer series, wining six games and losing none. The cup therefore comes to the college for a year from the College of Civil Engineering where it has been held the past year. The following is a list of games played and points scored:

Ag. 1	C. E. 0
" 3	Vets. 0
" 1	Law 0
" 2	M. E. 0
" 3	Arch. 0
" 1	Arts 0
—	—
Ag. 11	Opp. 0

Ag's goal was not crossed during the season. The following is the lineup:

c, W. C. Funk, '11 (Capt.); r. i., C. H. Lemon, ,'13; r. o., M. B. Goff, '13; l. i., H. Sonnenfeld, '12; l. o., H. B. Rogers, '12; c. h. W. de S. Wilson, '13. (mgr.); r. h. b. , S. C. Bishop, 13; l.h. b. J. H. Neethling,'11; f. b's., I. B. Lipman, '11, W. S. Stevens, '11; g., B. H. Cheu, '14. Substitutes, G. S. Rose, '13, N. V. Puga, '12, H. W. Hagemann, '13.

A word of appreciation must be added for the consistent efforts of C. Collado, '11, in coaching the team. Mr. Collado worked hard every afternoon with the candidates and a large measure of their success is due to his unselfish efforts.

* * *

The regular November Assembly was held on Thursday evening, Nov. 3 in connection with the annual fruit exhibit. After the regular opening by the singing of the Alma Mater, some musical numbers were enjoyed, including a piano duet by Miss Avery, '13, and Miss Northrup, '13, and two selections by the agricultural violin quartet. Dean Bailey's address, which followed, was a powerful one. He discussed the prevailing idea that the college should turn out a man well trained in the practical side of farm life, and showed that a student must acquire elsewhere the ability to milk a cow and plow a straight furrow. The Dean read some good poems, including "The Pumpkin Pie" by Whittier. The meeting was closed with the singing of the Evening Song, after which, all remained to join in the usual social hour and to look over the Fruit Exhibit.

* * *

The regular meeting of the Agricultural Association took place on Tuesday evening, November 15. After the singing of the Alma Mater, W. D. Haselton, '12, gave a talk on cross-country prospects, urging all men to help Agriculture win the annual inter-college race on November 19. W. C. Funk, 11, gave a talk on Soccer and S. G. Judd, '11, related the incidents of the trip to the National Dairy Show. C. V. P. Young, of the physical training department, and treasurer of the inter-college league, presented the cup, won by the Soccer team, to the college. Business was then taken up. A motion was made and carried that the Association appropriate enough

money to maintain the girls' glee club for the year. After some discussion of the question of the best means of agricultural education in New York State, the meeting was closed by the singing of the Evening Song.

* * *

Directly after the Association meeting on November 15, the senior class of the College of Agriculture, met and elected as officers the following students: A. L. Thompson, president, F. H. Hahnel, vice-president; Miss Grace Bennett, secretary; R. O. Mordorff, treasurer. The class voted to have a banquet at the college at some later date, not yet decided upon. The refreshments will be prepared by the girls of the class.

* * *

In getting four cups from the National Dairy Show, the Judging team brought honor to the College. The Jersey cup is here for the second time, and if won once more will remain permanently in our possession. Two cups are sweepstakes cups, donated by the National Dairy Show Association, and Hoards Dairyman, and the fourth cup was offered by the American Guernsey Cattle Club.

* * *

An out-of-town newspaper reported that fifteen acres were to be taken from Alumni field for the new buildings of the Agricultural College. Several trustees of the University declared that this report was absolutely false. The land was surrendered to be used as an athletic field and no such disposition of it could be made. The board of trustees, however, are giving careful consideration to the best possible situation for the three new buildings, and about December first another meeting will be held to discuss more complete plans for the extension. Various plans for the development of the College of Agriculture are under consideration and will be discussed at this meeting.

* * *

The plan of having addresses by various men of importance in agriculture once or twice a week at noon under the auspices of the Extension Department is working well. A very enjoyable address by Mr. Tucker, editor of the *Country Gentleman*, and one by Dean Bailey on "The Farm House" are the latest addresses. The Dean's speech is found in other columns of this paper.

* * *

The class of 1914 in agriculture held a meeting on the evening of November 17, in the auditorium. After the regular business, a special program was enjoyed. It was opened by the singing of the Alma Mater by the class. Then followed a piano solo by Miss Foster; a reading by Miss Crosman; a song by the freshmen quartet, and a stunt by Mr. L. Hiler.

* * *

Mr. W. J. Hoggson, of New York City, was in Ithaca for a few days in the middle of the month to discuss with Dean Bailey and the members of the faculty of the College of Agriculture regarding the feasibility of his scheme for co-operative farming. Mr. Hoggson is a member of the firm of Hoggson Brothers, architects, designers, and interior decorators. He believes the failure of cooperative schemes in the past has been due to the lack of efficient management. Mr. Hoggson has already started a colony in North Carolina on some land which he has purchased and philanthropists and others are watching the development of the colony. There are eleven families on his land. They were brought to America from Holland and are particularly well suited to work out the plan.

* * *

Professor John Craig spoke before the Y. M. C. A. in Brooklyn on the evening of November 16. His subject was "Opportunities in Horticulture." On the evening of November 17, he delivered a lecture on "Civil Improvement" before the Civic Improvement Society of Pearl River, Rockland County.

* * *

At the annual convention of the National Butter Makers' Association

recently held at Chicago, Mr. H. A. Ayres, '08, of Elsie, Michigan, received a mark on his butter of 95.66, which places him second in the list of states for competitors for state cups. F. S. Wright, of Etna, New York, '01, received a mark of 94.66. Another Cornell dairy student, H. W. Middaugh, '06, received a mark of 93.66. There were 600 entries in the butter class from every state in the Union and very few exhibitors received a higher mark than did our Cornell dairy students. This speaks well for the good work done by our butter instructor, W. E. Griffith, and his able assistants.

* * *

The department of Poultry Husbandry has reared this year approximately 4,000 chickens on the new poultry farm of 54 acres at Forest Home.

* * *

Applications for the Winter Poultry Course have been unusually large. The course was filled about two months before the date of opening, and over 30 students have been refused admission on account of lack of accommodations. No students have been accepted from other states than New York.

* * *

The poultry department has furnished pure bred stock for the Ohio State Experiment Station at Wooster and the Indiana State Experiment Station at Lafayette.

* * *

L. C. Schwartz, E. W. Benjamin, and J. E. Dougherty have been appointed student assistants in Poultry Husbandry.

* * *

Dr. L. H. Bolley, pathologist of the North Dakota Experiment Station, addressed the Plant Doctors on Friday evening, November 11th, on the subject of Fungous Diseases as a Factor in Soil Sanitation and Crop Rotation.

* * *

The first meeting of the Cornell Section of the American Society of Bacteriology was held on the evening of November 11. Professor Stocking, of the Department of Dairy Industry, spoke on "Milk Inspection from the Bacteriological Standpoint." Committees were appointed to plan for the reception of the members of the Society who held their annual convention in Ithaca last month. The officers of the Cornell section for this year are: H. N. Redfield, president; N. J. Prucha, vice-president; and H. W. Conn, secretary and treasurer. Meetings will be held regularly in the future on the second and fourth Fridays of each month.

* * *

By the time this issue appears, the short course students will be here, three hundred strong or more. There are five courses, General Agriculture, Dairy Industry, Poultry Husbandry, Horticulture, and Home Economics. All of these courses have had very heavy registration, especially the Poultry Husbandry department, which has been obliged to refuse twenty applications for admission. The regular December Assembly will be in the form of a welcome to the short course men by the regular students. A "Get Wise" meeting will acquaint the men with the activities of the college.

* * *

Professor A. D. MacGillivary of the Department of Entomology delivered an interesting lecture before the Agassiz Club on November ninth at the Agricultural College. His subject was "Pioneers of Entomology."

* * *

The junior class in Agriculture elected the following officers for the year 1910–11. President H. B. Rogers, '12; vice-president, Miss M. F. Dudley, '12; secretary, D. D. Ward, '12; treasurer, H. B. Knapp, '12.

* * *

At a meeting of the Agriculture cross-country candidates on November second, W. D. Haselton, '12, was elected captain for the present year. The team voted to approve the motion of the Cross Country club that the intercollege cross country race be held on or before November 19.

Professor C. G. Woodbury of Purdue University visited Cornell and the Agricultural College in November in the interests of his university. Prof. Woodbury has charge of the College of Horticulture at Purdue and while here consulted the department of Horticulture concerning ideas with reference to origin of experimental work in orcharding. While here he was the guest of different members of the Agricultural faculty.

* * *

The class in sub-tropical horticulture received a consignment of special tropical fruits, from Florida and other tropics. They will receive these rare fruits weekly and will use them in their study. In this consignment were grape fruits of exceptional size and quality, also oranges, limes, pomegranates, alligator pears, sugar apples, guava and several rare types of fruits from these torrid countries.

* * *

Dean Bailey took a short extension trip through New York State in the beginning of November. He spoke at Lawyersville on November first, also at Albany where he lectured before the State Committee, which was holding a convention to devise a plan for the organization of all agricultural institutions in the state and for the uplift of rural districts.

* * *

The new greenhouse was opened with a chrysanthemum exhibition and flower show. Fifty varieties of chrysanthemums, imported and grown under the personal direction of Professor Craig and Mr. Cosh, were shown. Most of them were of Japanese origin imported from France, England and Australia.

* * *

The freshman class in agriculture decided at a meeting to levy a tax of twenty-five cents to help cover the expenses of the new trophy room. At the same meeting, a constitution was read and adopted.

* * *

Mr. Jared Van Wagemann, Sr., of Lawyersville, N. Y., a successful farmer, and father of Jared Van Wagemann, B. S. A. '91, visited Secretary Mann, and the College the last of November.

* * *

During October Professor Stocking attended the National Dairy Show at Chicago. At this show he judged the milk and cream exhibits. He also read a paper entitled "Training Men for College and Experiment Station Work," at the annual meeting of the Official Dairy Instructors Association. He was elected secretary-treasurer of this association.

The department of Dairy Industry sent exhibits of milk and cheese to the State Fair and received the following scores: Creamery butter, 99.16; butter from gathered cream, 93.33; Young America cheese, 99.24; sage cheese, 97.50; neufchatel, 97.50; cream cheese, 97.00. The cheese was made by G. N. Tobey and the butter by Chas. Kindelberger. The department received complimentary medals for the highest score in export and home trade cheese.

The number of winter course students registered up to date in the Department of Dairy Industry is 104. There are only two from outside the state, one from Louisiana and two from Pennsylvania.

Professor John Michaels, formerly of Wisconsin will take charge of the cheese work in the short course. C. E. Dutton, one of the inspectors of the State Department of Agriculture will also give instruction in the winter course.

* * *

J. C. Weld of the Dairy Inspection Department of the United States Department of Agriculture visited the College in the middle of November.

FORMER STUDENTS

PETER LANGWELL, W. D., '94

Peter Langwell of Rochester, N. Y. was a student at the Cornell Dairy School in the class of 1894. He was a studious man and had no other business here than to gain and to retain all of the dairy information possible. He succeeded in his undertaking and at the end of the term the Dairy School faculty secured for him a position with Theodore E. Baselin of Croghan, Lewis Co., N. Y. He took charge of the small dairy farm of Mr. Baselin. At the expiration of his term with Mr. Baselin he moved to Sodus, N. Y. A co-operative creamery had been erected there and the board of directors engaged him as butter maker and general manager of the business. He was so successful in the production of fancy butter that the company erected a canning factory, the management of which was placed in his hands. This was also a successful undertaking and later they erected another creamery at Wolcott, N. Y. Mr. Langwell was also in charge of this plant. He remained there for several years, when five years ago he accepted a position with the Brighton Place Dairy Co. of Rochester, N. Y. His work included everything from the buying to the selling of milk and cream, supplies for the business, collecting and banking, hiring and discharging employees and having full management of the company's business. They had three small routes when he took the work in charge five years ago, and today they have twelve routes doing a business of $150,000 per year. About the first of October of this year he sold his stock which he held in the Brighton Place Dairy Co. and resigned his position as business manager. Since then he has organized a company of his own and has full control of the new company's affairs. Judging from the success with which he has met since he has left Cornell, there seems to be little danger of failure in his new undertaking. His acquaintance with the consumers of sanitary milk and cream in Rochester, together with his long, practical and honorable career in the milk industry, will secure for him his share of business. (W. W. HALL.)

'98, B. S. A.—E. Dwight Sanderson, recently director and entomologist of the New Hampshire agricultural experiment station, is now dean of the department of agriculture of the West Virginia University, Morgantown, W. Va.

'99, B. S. A.—*Science* says that Dr. Heinrich Hasselbring, of the Bureau of Plant Industry, United States Department of Agriculture, will be in residence at the department of botany in the University of Chicago during the winter quarter (January-March) of the present academic year. He will give a course in plant pathology and will direct special work dealing with parasitic fungi. It is the purpose to establish in the department work in plant pathology on a physiological basis.

'99, B. S. A.—Walter Mulford, Junior professor of forestry engineering at the University of Michigan visited Dean Bailey and the college, November fourth and fifth, attending the fruit show while here.

'03, B. S. A.—Herbert A. Hopper who is at present a professor at the University of California has recently bought a farm near Ithaca and contemplates living on it in the near future.

Sp. A.—H. C. Crouch was at the National Dairy show at Chicago and is still superintendent of the Dairy Farm as the University of Illinois.

'05, B. S. A.—G. Wendell Bush has been very successful in the improving of the production on the Arden Farms Dairy, Arden, N. Y. This farm is on the Harriman estate.

Sp. A.—F. W. Shimel has recently received the position as manager of the dairy farm of Mr. W. S. Rice at Adams, N. Y.

'06, B. S. A.—Walter Tailbey exhibited three Cheshires at the New York State Fair this fall winning 2 first prizes and a second.

'06, B. S. A.—B. H. Crocheron is principal of the agricultural school at Philopolis, Md.

'06, B. S. A.—L. B. Gable of Wyebroke, Pa. is supervisor of his town.

'06, B. S. A.—C. F. Shaw who is assistant in the department of Soils at the Pennsylvania State College of Agriculture has been making an extensive soil survey.

'07, B. S. A.—G. D. Cooper is at present in George H. Miller's office in Boston in charge of the landscape plans for Corey, "the new steel city of the South." His address is 25 Hancock street, Boston, Mass.

'07,—J. Louis Roberts, is managing a large fruit farm at Mosier, a fruit growing region only a few miles from Hood River, Oregon. Mr. Roberts also owns an orchard in Hood River.

'08, B. S. A.—Milton P. Jones is living at 11 Park Place, Saranac Lake, N. Y.

'08, B. S. A.—L. R. Gracy's address is 39 Baker street, Saranac Lake, N. Y. He is recovering from a serious illness.

'08, B. S. A.—J. Vincent Jacoby's address is R. F. D., Basking Ridge, N. J.

'08—The COUNTRYMAN is in receipt of an outline of the courses given in botany and horticulture at the college of Hawaii. The work is in charge of Professor Vaughan MacCaughey. Besides explaining the nature of the courses offered by the college, reference is made to its equipment, lectures and Botanical and Horticultural conditions in Hawaii.

'08, B. S. A.—Frank S. Hayden has been spending the last two years in the fruit growing regions of Texas, Utah, and Oregon learning the methods of packing and handling fruit used there.

'09, B. S. A.—Edwin W. Mitchell has nearly completed his first year on his fine fruit farm at Stuyvesant Falls, N. Y. He has over 15,000 barrels of fruit, pears and apples. Besides general farming operations he has conducted spraying experiments for the Grisilli Co. He is secretary and treasurer of the Kinderhook Pomological Society.

'09, B. S. A.—Paul Judson has located in the Kinderhook fruit section where he is laying out an apple orchard of 4,000 trees this fall.

'10, B. S. A.—Morris C. Oldham's address is 619 East High street, Springfield, Ohio.

'10, Ph. D.—Leonard Haseman and Mrs. Haseman (Elosia B. Fish, A.B., '10) live at Couzins and Anthony streets Columbia, Mo. Dr. Haseman is instructor in entomology in the University of Missouri.

'10,—Ralph R. Root, B. S. A., '10, is in the Harvard School of Landscape Architecture, and Llewellyn M. Buell, A.B., '10, is taking graduate work in English. The address of the two is 49 College House, Cambridge, Mass.

'10, B. S. A.—H. C. Young is now located with the Bell Telephone Co. in Pittsburg, Pa. His address is 727 Negley Ave., Pittsburgh, Pa.

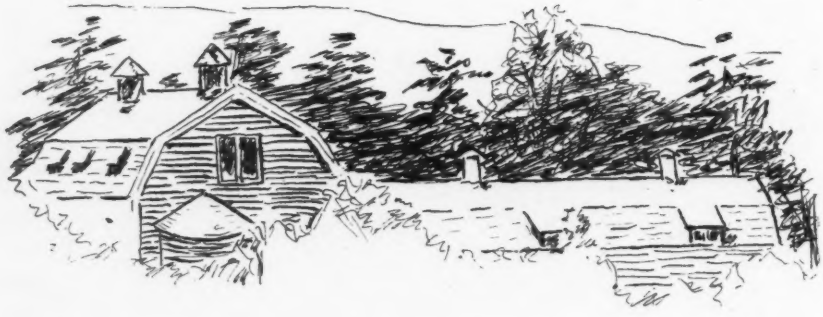
'10, B. S. A.—Vincent J. Frost who has been in the employ of the American Steel & Wire Co. since last March, has since the early part of November been testing spray machines and spray nozzles in the

laboratory of the department of Farm Mechanics. He expects to be sent to Florida early in December.

'10, B. S. A.—Roy D. Anthony who was also connected with the American Steel & Wire Co. is now instructing in the department of Pomology here in the University.

'10, B. S. A.—Boyd D. Gilbert has recently completed his work on the soil survey of Monroe County, N. Y.

Ex., '11, B. S. A.—E. D. Smith of Delevan, N. Y. writes from Hood River, Oregon, that he is getting good experience in packing and handling fruit in the west.



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(Photo by Dr. Gould)

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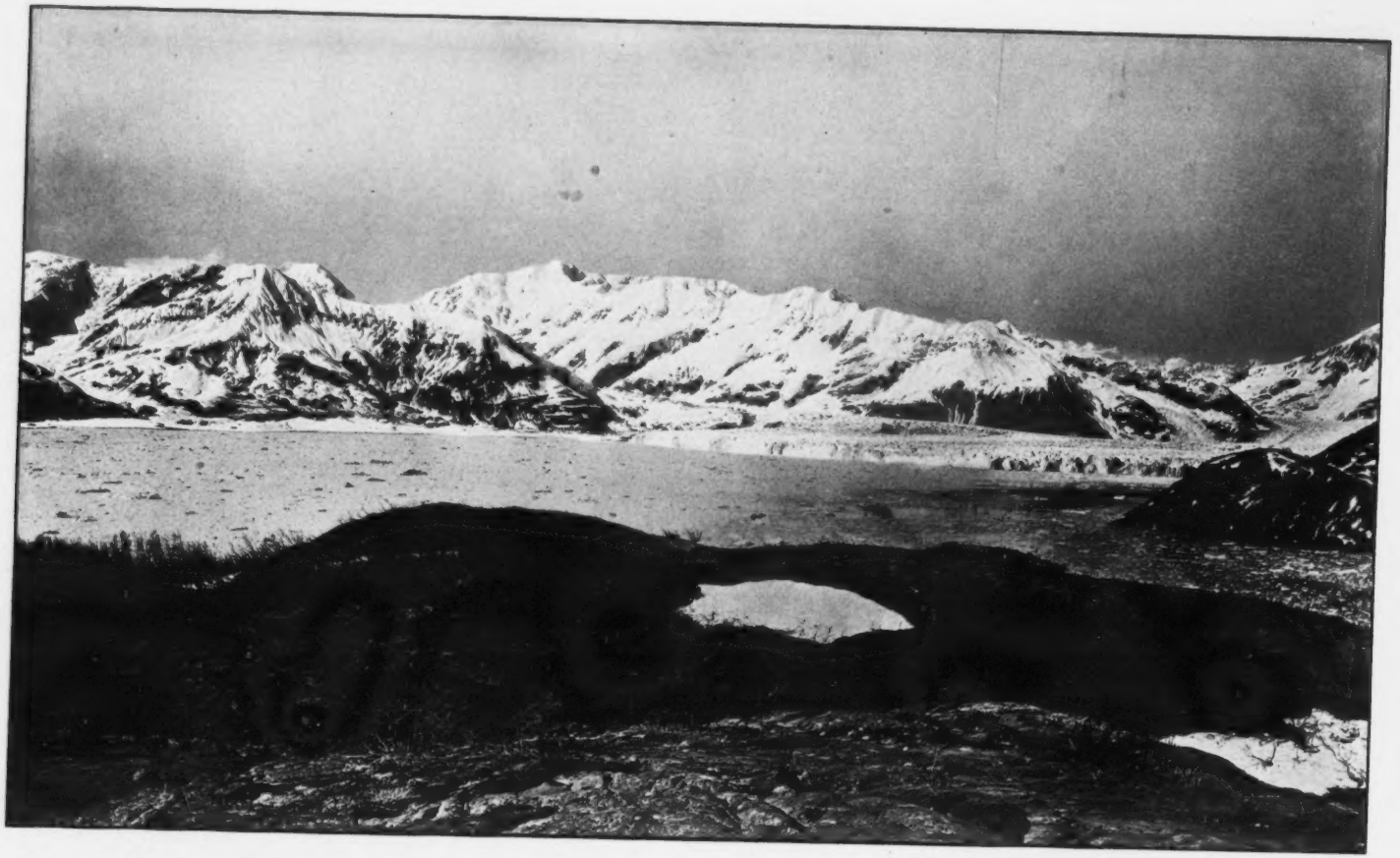

THE HUBBARD GLACIER, WHOSE ICE CLIFF 250 OR 300 FEET HIGH, IS FIVE MILES IN LENGTH, AND FROM IT A PROCESSION OF ICEBERGS IS FLOATING DOWN THE FIORD. THE MOUNTAINS IN THE BACKGROUND RISE FROM 10,000 TO 16,000 FEET. THIS IS ONE OF THE PARTS OF THE ALASKAN COAST NOT ACCESSIBLE TO THE ORDINARY TRAVELLER.